TECHNOLOGY DEPT.

November 12, 1941

NATIONAL PETROLEUM NEWS

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DETROIT

Defense is Refiners' Keynote at A. P. I.

The Oil Technologist's Role In National Defense

Defense first, normal product requirements second—that's the thought uppermost in the minds of oil's technologists as they gather in San Francisco for A.P.I.'s 22nd annual meeting. But "business as usual" insofar as economics and efficiency of operation are concerned should not be disregarded. " . . . Necessity for economic analysis is of greater importance now than ever before". Page R-353.

Precise Commercial Fractionation Unit Described

A detailed report on the design of a 1000-bbl. commercial fractionating unit incorporating Stedman packing. Page R-355.

Abstracts of A.P.I. Refining Papers

Speeches at A.P.I. meeting covered all branches of refining. NPN has prepared short reviews on some of these papers. Pages R-360, R-362.

Polyform and Gas Reversion Processes For Making Higher Octane Gasoline

Application of these processes to the conversion of low-octane naphtha to high-octane gasoline, and to the cracking of full crude is explained. Page R-364.

REFINING TECHNOLOGY EDITION

MORRISON BROS. COMPANY
OIL EQUIPMENT HEADQUARTERS
DUBUQUE, IOWA

NATIONAL PETROLEUM NEWS—November 12, 1941—Vol. XXXIII—No. 46

Published every week at 1213 West 3rd St., Cleveland, Ohio, U.S.A. Subscription rate $5.00 per year in United States, Mexico, and Pan-American countries; $6.50 Canada and foreign countries. Entered as second class matter Jan. 17, 1910 at Cleveland, O., post office under act of March 3, 1879, by The National Petroleum Publishing Co. Copyright 1941 The National Petroleum Publishing Company.

COMING MEETINGS

DECEMBER

Exposition of Chemical Industries, Grand Central Palace, New York, N. Y., Mon.-Sat., Dec. 1-6.

New Mexico Oil & Gas Assn., Artesia New Mex., Wed., Dec. 3.

Oil Dealers' Assn. of Arkansas, 7th Annual Convention, Little Rock, Ark., Wed., Dec. 3.

Nebraska Petroleum Marketers, Inc., Fontanelle Hotel, Omaha, Neb., Tues.-Thurs., Dec. 2-4.

Oklahoma Stripper Well Assn., Tulsa, Okla., Fri., Dec. 5.

National Highway Transportation Show, Convention Hall, Philadelphia, Pa., Sat.-Fri., Dec. 6-12.

South Dakota Independent Oil Men's Assn., 23rd Annual Convention, Aberdeen Civic Auditorium & Hotel Sherman, Aberdeen, S. D., Tues.-Wed., Dec. 9-10.

New Jersey Oil Trade Assn., Annual Banquet and Election of Officers, Robert Treat Hotel, Newark, N. J., Thurs., Dec. 11.

JANUARY, 1942

Society of Automotive Engineers, Annual Meeting (and Engineering Display) Book Cadillac Hotel, Detroit, Mich., Mon.-Fri., Jan. 12-16.

FEBRUARY

Kentucky Petroleum Marketers, 16th Annual Meeting, Louisville, Ky., Wed.-Thurs., Feb. 11-12.

Iowa Independent Oil Jobbers' Assn., Annual Convention, Hotel Fort Des Moines, Des Moines, Ia., Wed.-Fri., Feb. 25-27.

American Petroleum Institute, Div. of Production, Southwestern District, Spring Meeting, Adolphus Hotel, Dallas, Tex., Thurs.-Fri., Feb. 26-27.

North Texas Oil & Gas Assn., Wichita Falls, Tex., Sat., Feb. 28.

MARCH

Indiana Independent Petroleum Assn., Spring Convention and Refiners' and Suppliers' Exhibit, Hotel Severin, Indianapolis, Ind., Tues.-Thurs., March 3-5.

American Society for Testing Materials, Committee Week and Spring Meeting, Cleveland, Ohio, Wed., March 4.

Wisconsin Petroleum Assn., Annual Convention and equipment Show, Schroeder Hotel, Milwaukee, Wis., Wed-Fri., March 18-20.

American Society of Mechanical Engineers, Spring Meeting, Houston, Tex., Mon.-Wed., March 23-25.

APRIL

American Institute of Mining & Metallurgical Engineers, Cincinnati, O., Wed.-Fri., April 15-17.

National Petroleum Assn., 39th Semi-Annual Meeting, Hotel Cleveland, Cleveland, O., April 16-17.

American Assn. of Petroleum Geologists, 27th Annual Meeting, Cosmopolitan Hotel, Denver, Colo., Tues.-Fri., April 21-24.

Petroleum Industry Electrical Assn., Washington-Youree Hotel, Shreveport, La., Wed.-Fri., April 22-24.

MAY

Natural Gasoline Assn. of America, 21st Annual Convention, Mayo Hotel, Tulsa, Okla., Wed.-Fri., May 13-15.

International Petroleum Exposition, Tulsa, Okla., Sat.-Sat., May 16-23.

JUNE

American Society of Mechanical Engineers, Semi-Annual Meeting, Cleveland, Ohio, Mon.-Thurs., June 8-11.

American Society for Testing Materials, Chalfonte-Haddon Hall, Atlantic City, N. J., Mon.-Fri., June 22-26.

OCTOBER

American Society of Mechanical Engineers, Fall Meeting, Rochester, N. Y., Mon.-Wed., Oct. 12-14.

NOVEMBER

American Chemical Society, National Chemical Exposition and National Industrial Chemical Conference, Stevens Hotel, Chicago, Ill., Tues.-Sat., Nov. 17-21.

American Society of Mechanical Engineers, Annual Meeting, New York, N. Y., Mon.-Fri., Nov. 30-Dec. 4.

NATIONAL PETROLEUM NEWS

NOVEMBER 12, 1941

NEWS

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Published every Wednesday by The National Petroleum Publishing Co.

WARREN C. PLATT, *Editor and Publisher*
V. B. GUTHRIE, *Managing Editor*

Member of Audit Bureau of Circulation and Associated Business Papers Inc.

Publication office: 1213 W. Third St., Cleveland, Ohio, U.S.A. Telephone, CHerry 7672. Cable Address PLATTOIL, Cleveland. Cable inquiries are answered by mail unless subscriber advances sufficient funds in American money to cover our cable costs.

NEWS BUREAUS

New York, 50 W. 50th Street, Telephone Columbus 5-1516 and 5-1517.

Washington, D. C., 803-805 National Press Bldg., Telephone, NAtional 0654.

Tulsa, Okla., 904 World Bldg., Telephone, 3-7132.

Los Angeles, 610-A Hillstreet Bldg., 815 South Hill Street, Telephone, VAndike 2845.

Chicago, 59 E. Van Buren Street, Telephone, Harrison 5901-2-3.

Subscription rate $5 per year in United States, Mexico and Pan-American Countries; $6.50 in Canada and Foreign Countries. Current copies 20 cents, except special issues; back copies more than two months old 30 cents per copy

THIS WEEK WITH NPN

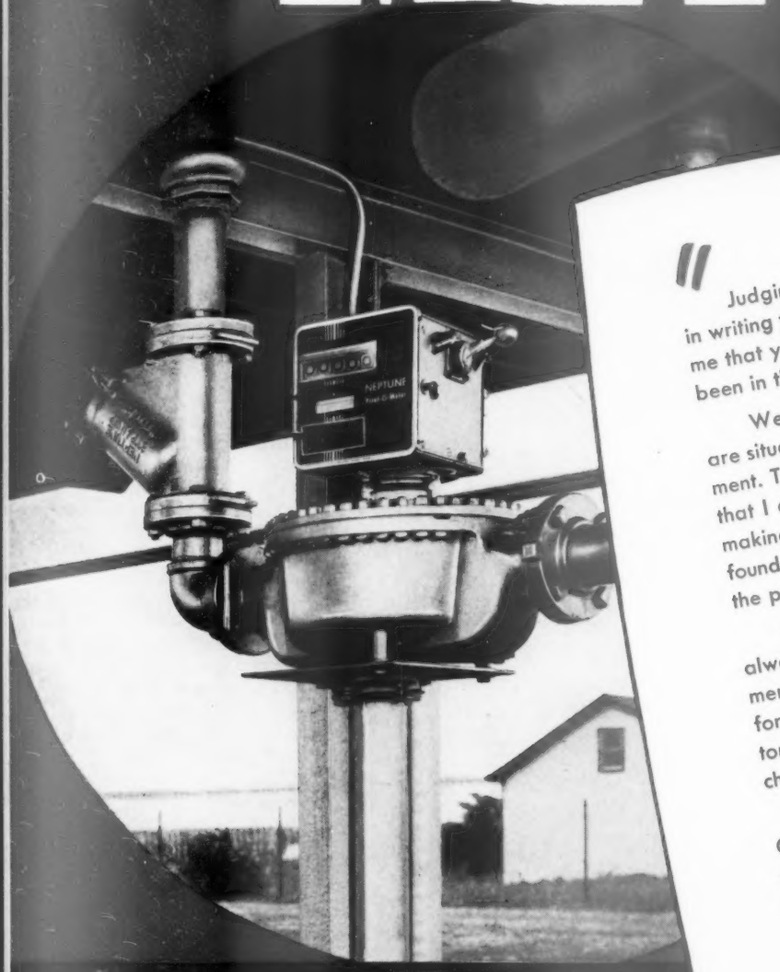
FUTURE

NPN's Personal page last week featured a photo of oil marketers attending a class in the station attendant training program sponsored by the Indiana Independent Petroleum Assn. Evidently the book, "The Future for the Independent Oil Jobber," is playing a part in the sessions of this group for the photo discloses a copy of the book prominently in the foreground. Oil Marketers who wish to take advantage of NPN's special combination offer of this book and a companion report, "Facts About the 1941 Independent Oil Jobber," plus a one-year new or renewal subscription to NPN, can do so by sending in their renewal to NPN now, as the special combination is offered only in connection with subscriptions. Subscriptions will be renewed for one year from the date of expiration of the present subscription, and NPN will notify all purchasers of the new expiration date.

NPN CHECKS

Much careful checking goes into the articles that appear in NPN, before they are finally approved for publication. In many cases, even the information received from authoritative sources is double checked for accuracy. A sample of NPN's thoroughness in checking information is shown in the recently-published article on the lubrication of 1942 Buick cars. After Buick's data had been received from the manufacturer, NPN as usual started rechecking against other available data which disclosed a mistake in crankcase capacity. The error was corrected and right information appeared in NPN. Much later, after the item had appeared, NPN was notified by Buick of the error in its original announcement.

in METERS



"Judging from what I have heard, Red Seal users are not backward in writing you about what their meters are doing for them. It occurred to me that you might be interested in the views of a coal dealer, who has been in the coal business for the past twenty-two years.

We took on fuel oil as a sideline because the locality in which we are situated was rapidly becoming "populated" with oil-burning equipment. There were certain misgivings about the fuel oil line—conditions that I didn't quite understand. Some fuel oil distributors seemed to be making pretty good money, and others quite the contrary. I think I've found the answer. Unaccounted-for losses seem chiefly responsible for the paring of profits.

Such losses haven't bothered us, because in the coal business we always have kept an accurate check of receivals and withdrawals of our merchandise. Our coal is sold by weight. Our trucks are checked in before and after loading. Because this method has worked so satisfactorily, I decided to install Neptune Red Seal Meters to keep an accurate check on the fuel oil.

We had our fuel oil tank truck equipped with a 2" Red Seal Meter—Compact type, with Model 334 Auto-Stop Print-O-Meter Register. When we set up our fuel oil plant, this Spring, we installed three 3" Red Seal Meters (with swivel register) on the loading racks.

These meters have performed satisfactorily at all times. I can say, in all honesty, that they certainly have smoothed our bulk handling, sales and bookkeeping. No doubt they have been a big factor in assuring us the right profits and helping us to expand our fuel oil business to a sizable volume.

Our fuel oil customers, I might add, are just as keenly interested in "certified full measure" as are coal customers.

CLAUSS COAL & FUEL OIL

Al Clauss

MELROSE PARK, ILL.
September 25, 1941

NEPTUNE RED SEAL M

Gasoline Dispensing Pumps • Meters for: Barge and Tank Car Unloadings • Storage Transfers • Loading Racks • DeliveryTank Trucks

NEPTUNE RED SEAL METER CO.

Foolproof is "Foolproof"?

AND HOW LONG should a meter last? These are matters in which you, and your Government as well, have a direct interest . . .

METERS ARE ENLISTED in the fight against waste. Leaks and discrepancies can be spotted unerringly when meters are the watchdogs guarding bulk plant stock receivals, storage transfers, loading-rack fills, and tank truck deliveries.

But how long does a meter maintain its full efficiency and usefulness? How well does it justify the use of the metals and the labor employed in its manufacture?

The quality of RED SEAL performance is best described by the meter users themselves.

We need merely point out that the Red Seal measuring-chamber has only one moving part. Movement is non-pulsating; wear negligible. A heavy outside casing protects the entire mechanism from abuse, and absorbs any line pressure. For exposed outdoor installations, weatherproof models are available.

Red Seal capacity ratings are conservative; seldom is there trouble from over-loads. Cleaning is simple. Gear train and register, while extremely sensitive, are carefully housed and safeguarded. Round dials are etched in aluminum and are washable. Meter calibration is made quickly and easily by patented change gear shifter or conventional change gears.

*What Do Red Seal *Users Say?*

"With the aid of this meter we were able to hold a very strict control on gasoline stocks and eliminate all shortage except that due directly to temperature changes. The original meter was in continuous use until 1939 (installed about seven years prior), having handled over 10,000,000 gallons with no repairs or adjustments. At that time we replaced it with a 3" automatic trip Neptune Red Seal Meter, it being replaced only because we installed 3" equipment throughout. Last year we purchased our third Neptune Red Seal . . . for our fuel oil bulk plant."

"Our records for the month show that this gasoline (93,385 gallons) was delivered through your meter (on transport truck) and that at the end of the month we have had a shortage of 4.8 gallons."

"I have four Red Seal meters now on tank trucks, and one of them—five years old with nearly 2,000,000 gallons on it—has never been adjusted."

"We have handled approximately the following amounts through these meters:

Gasoline 11,630,325; 5,863,023; 3,925,693; Kerosene 6,072,086; Oil 2,736,861.

The meters have given us very little trouble, and the service was very prompt and satisfactory when trouble did develop. The maintenance has been very low."

"About three years ago we installed a Red Seal meter on a truck used for delivering fuel oil. This proved so satisfactory that a short time afterward we installed one on our gasoline truck used in making city deliveries. The upkeep on these meters has been practically nil."

***NAMES UPON REQUEST.**

NEPTUNE METER COMPANY

World's Largest Manufacturers of Liquid Meters

Main Office, 50 W. 50th St., New York. Branches in Atlanta, Boston, Chicago, Dallas, Denver, Kansas City (Mo.), Los Angeles, Louisville, Philadelphia, Portland (Ore.), San Francisco, Toronto.

METERS

Positive Control of Plant Gallonage

Confidence in the sustained accuracy of Red Seal metering, has induced many a bulk plant to put fully into effect the RED SEAL METER MASTER SYSTEM AND STOCK RECORD CONTROL PLAN FOR BULK STATIONS. No other system has had so stabilizing an influence or afforded so profitable and tight a control of inventory and sales.

Any Neptune office will give you full particulars—or provide you with a helpful booklet (Bulletin 591) on the efficient use of petroleum meters.

1766

YOUR CUSTOMERS TELL THE WORLD!

When car owners discover the secret of *extra* power and economy, you can't expect them to keep it to themselves! That's why many an Ethyl user is helping *you* sell your best gasoline by "telling the world" how much better his car runs with Ethyl—delivers more "knockless" power for every gallon it uses, gives smoother driving every mile. Thousands of these Ethyl users say:

Car owners are finding from their own experience on the road that gasoline from the pump with the Ethyl emblem is their best buy. And car dealers and servicemen are helping sales of your quality fuel by advising their customers to use Ethyl—pointing out to them that it permits setting the ignition timing for more power and economy without knock in today's high compression engines. Why not show *your* customers how they can get their money's worth in extra power, extra smoothness, extra driving pleasure?

Ethyl Gasoline Corporation, Chrysler Building, New York City.

ETHYL
ETHYL GASOLINE CORPORATION

SELL FROM THE PUMP WITH THE ETHYL EMBLEM—

STATISTICS

N.P.N. Gasoline Index

	Dealer T.W.	Tank Car
	Cents per Gallon	
Nov. 10	10.05	6.77
Month ago	10.02	6.80
Year ago	8.71	5.06

Dealer index is an average of "undivided" dealer prices, ex-tax, in 50 cities.

Tank car index is a weighted average of 9 wholesale markets for regular-grade gasoline.

Tank car index is a weighted average of following wholesale markets for regular-grade gasoline, FOB refineries or terminals: Okla., Mid-Western, W. Penna., Calif., N. Y. Harbor, Philadelphia, Jacksonville, Boston, Gulf Coast.

Mid-Continent Refined Products Statistics

(Compiled by Western Petroleum Refiners Ass'n. for September, 1941 from member reports. Figures in barrels of 42 gallons)

Product	Production	Shipments	Inventory End of Mo.
Kerosine, 41-43	299,656	437,874	264,867
Kerosine, 42-44	108,354	127,466	221,011
Tractor Fuel A (Non-taxable)	61,274	76,574	77,209
Tractor Fuel B (Taxable)	47,123	62,291	39,868
Furnace & Gas Oil			
No. 1 White	220,439	179,812	737,890
No. 1 Straw (38-40)	126,024	82,425	313,811
No. 2 Straw (32-36)	428,749	179,475	955,783
No. 2 Dark (32-36)	38,269	38,502	136,622
U. G. I.	26,750	17,873	53,547
Fuel Oil			
28-30 Zero	36,372	41,390	51,840
24-28	29,491	45,180	14,597
18-22	—8,143	2,247	1,013,132
14-16	27,640	25,272	27,053
14 and Below	1,343,934	1,328,772	990,928

Oil Burner Statistics

(Compiled by U. S. Bureau of Census. Figures include burners consuming Commercial Standard No. 1 fuel oil or heavier)

Item	1941 Sept.	1941 Aug.	1940 Sept.	1939 Sept.
New orders, less cancellations	34,143	31,140*	41,895	36,279
Unfilled orders, end of month	22,321	22,885	8,607	5,967
Shipments:				
Total	34,707	31,369*	41,490	35,352
United States	34,467	31,096*	41,243	35,038
Canada	54	91	189	140
Foreign	186	182*	58	174
Stocks, end of month	27,294	31,940	19,617	16,460

	Total 9 Months —January-September— 1941	1940	1939
New orders, less cancellations	243,005	188,620	150,799
Shipments:			
Total	228,727	182,918	146,987
United States	226,715	180,440	143,013
Canada	875	1,026	639
Foreign	1,137	1,452	3,335

*Revised.

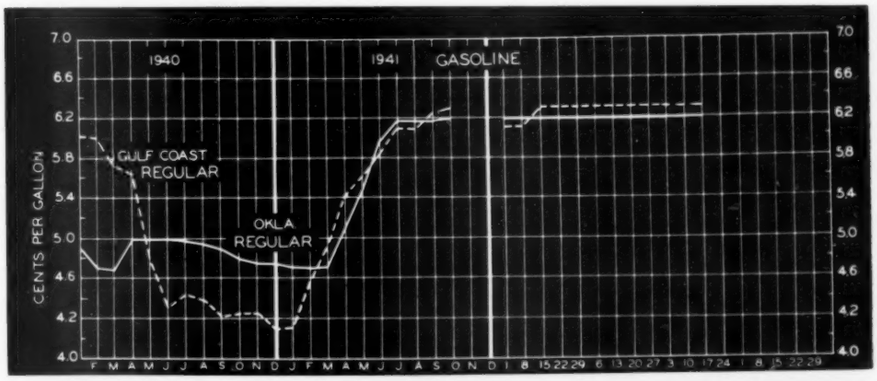
Pennsylvania Crude Runs

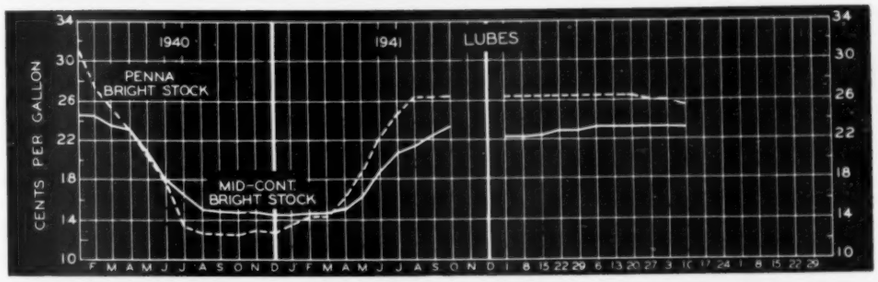
(Compiled by National Petroleum Assn. from reports of all companies that refined Pennsylvania crude. Figures in barrels.)

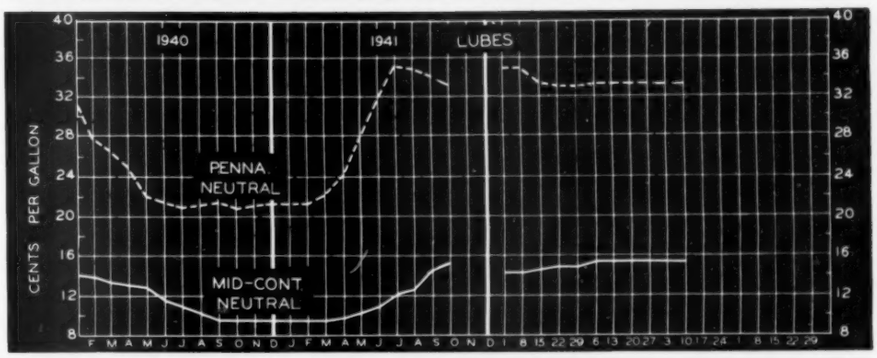
Week Ended	Daily Average	Week Ended	Daily Average
Jan. 4	60,635	June 14	79,514
Jan. 11	71,543	June 21	75,020
Jan. 18	75,854	June 28	74,440
Jan. 25	74,429	July 5	71,340
Feb. 1	74,363	July 12	80,616
Feb. 8	75,735	July 19	76,155
Feb. 15	73,712	July 26	74,353
Feb. 22	71,890	Aug. 2	76,762
Mar. 1	68,969	Aug. 9	62,961
Mar. 8	65,810	Aug. 16	70,248
Mar. 15	76,617	Aug. 23	76,551
Mar. 22	73,851	Aug. 30	80,293
Mar. 29	73,592	Sept. 6	78,653
Apr. 5	75,127	Sept. 13	82,635
Apr. 12	72,045	Sept. 20	78,496
Apr. 19	76,970	Sept. 27	81,431
Apr. 26	79,147	Oct. 4	76,824
May 3	71,827	Oct. 11	78,171
May 10	72,608	Oct. 18	76,079
May 17	73,322	Oct. 25	80,321
May 24	77,003	Nov. 1	84,013
May 31	78,235	1940 Low	58,516
June 7	67,639	1940 High	85,584

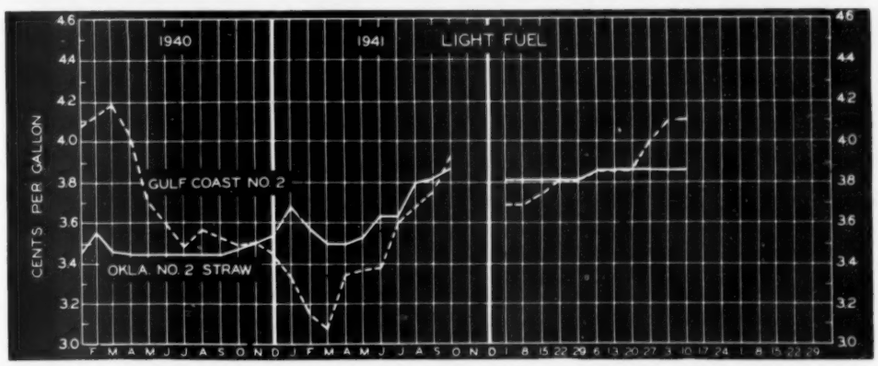
Refinery Prices

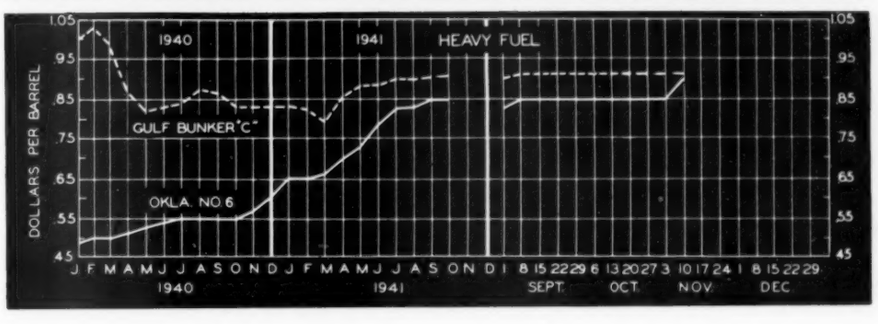
Monthly prices in graphs are averages of daily high and low prices shown in Platt's Oilgram. Weekly prices are averages of high and low prices shown in Monday Oilgram, and in NPN.











WHEN REACH COUNTS!

Gilbert & Barker is producing for the Army and Navy precision materiel for National Defense purposes, as well as supplying the Gilbarco products you know. These regular Gilbarco products continue to be available to our customers.

THE NEW "EASY REACH" CALCO-METER

HERE, at last, is a pump that gives you all the advantages of an extension-hose pump, with none of the disadvantages.

It has no reels to jam. No latches to get out of order. No tension springs to tire the arms of your operators. Instead, the "EASY REACH" is *simplicity itself.*

Just enough hose hangs outside the "EASY REACH" for normal deliveries. But inside—counterweighted so that it retracts automatically—is an additional length that comes out whenever you need it for hard-to-reach cars.

This exclusive "EASY REACH" feature makes this newest CALCO-METER the 100%-practical extra-hose pump. When you add to this CALCO-METER'S *proven* million-gallon dependability, smoother operation and lower maintenance expense—it's easy to see why it's the choice of shrewd service station operators from coast to coast.

You owe it to yourself to get full details. Write for *Bulletin ER* today!

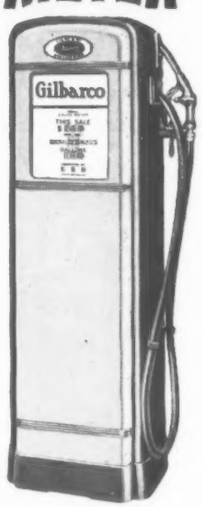
GILBERT & BARKER MANUFACTURING COMPANY
Springfield, Mass. Toronto, Ontario, Canada

Gilbert & Barker Mfg. Co.
Springfield, Mass.
Please mail me your illustrated folder, ER, describing the new "EASY REACH" CALCO-METER.

*Name*_____

*Address*_____

*City & State*_____



STATISTICS

Refinery Operations

(American Petroleum Institute Figures in Thousands of Barrels of 42 Gallons each)

Districts	Daily Average Crude Runs to Stills, Week Ended		Per Cent of Reporting Capacity Operated, Week Ended		Gasoline Production at Refineries incl. Natural Blended, Week Ended		Total Stocks Finished & Unfinished Gasoline, Week Ended	
	Nov. 1	Oct. 25	Nov. 1	Oct. 25	Nov. 1	Oct. 25	Nov. 1	Oct. 25
East Coast	655	669	97.3	99.4	1,728	1,689	19,220	19,547
Appalachian	146	126	105.0	90.6	493	440	3,292	3,149
Ind., Ill., Ky.	664	651	104.6	102.5	2,629	2,741	15,639	15,382
Okla., Kans., Mo.	310	319	93.1	95.8	1,252	1,299	7,576	7,309
Inland Texas	139	142	83.7	85.5	650	660	2,342	2,381
Texas Gulf	939	969	94.0	97.0	3,077	2,986	11,021	11,527
La. Gulf	159	152	107.4	102.7	407	470	2,593	2,501
N. La., Ark.	51	53	108.5	112.8	153	166	393	413
Rocky Mt.	45	55	66.2	80.9	220	199	996	999
California	602	558	84.2	78.0	1,545	1,666	14,751	14,715
Reported	3,710	3,694	94.6	94.2	12,154	12,316	77,823	77,923
Estimated Unreported	370	366			1,350	1,370	5,400	5,420
U. S. Total*	4,080	4,060			13,504	13,686	83,223	83,343
U. S. Total 11-1-40*	3,529				11,680		79,185	

Districts	Total Stocks Gas Oil & Distillates, Week Ended		Total Stocks Residual Fuel Oil, Week Ended		Stocks Aviation Gasoline Included in Finished & Unfinished Gasoline Total, Week Ended	
	Nov. 1	Oct. 25	Nov. 1	Oct. 25	Nov. 1	Oct. 25
East Coast	21,519	20,771	11,714	10,907		
Appalachian	662	663	415	400	East Coast 660	649
Ind., Ill., Ky.	5,886	5,934	4,695	4,641		
Okla., Kans., Mo.	2,146	2,179	2,252	2,195		
Inland Texas	482	474	1,414	1,353	Interior 1,330	1,357
Texas Gulf	6,227	6,380	9,124	8,947		
La. Gulf	1,661	1,857	2,052	2,068		
N. La., Ark.	453	407	416	397	Gulf Coast 2,631	2,649
Rocky Mt.	131	132	296	307		
California	13,099	12,961	62,824	62,755	California 2,057	2,090
Reported	52,266	51,758	95,202	93,970	6,678	6,745
Estimated Unreported	1,500	1,425	1,325	1,325	380	385
U. S. Total*	53,766	53,183	96,527	95,295	7,058	7,130
U. S. Total 11-1-40*	49,037		107,011		6,216	

*Estimated, U. S. Bureau of Mines basis.

Crude Oil Stocks

(Bureau of Mines Figures in Thousands of Barrels)

Grade or Origin	Oct. 18	Oct. 25	Nov. 1	Change from Oct. 25
Pennsylvania Grade	3,867	3,833	3,805	— 28
Other Appalachian	1,417	1,407	1,432	+ 25
Lima-Michigan	1,139	1,183	1,263	+ 80
Illinois-Indiana	19,262	19,174	18,765	— 409
Arkansas	2,703	2,611	2,576	— 35
Kansas	7,577	7,035	6,976	— 59
Louisiana:	12,925	12,960	12,440	— 520
Northern	4,054	4,043	3,745	— 298
Gulf Coast	8,871	8,917	8,695	— 222
Mississippi	1,709	1,778	2,137	+ 359
New Mexico	6,605	6,745	6,988	+ 243
Oklahoma	52,394	52,089	52,142	+ 53
Texas:	80,916	80,832	81,999	+1,167
East Texas	19,827	20,129	21,238	+1,109
West Texas	17,360	17,380	17,576	+ 196
Gulf Texas	24,304	23,860	23,316	— 544
Other Texas	19,425	19,463	19,869	+ 406
Rocky Mountain	15,587	15,730	15,888	+ 158
California	35,198	34,735	34,593	— 142
Foreign	2,306	2,149	2,336	+ 187
Total United States refinable	243,605	242,261	243,340	+1,079
Heavy in California	9,940	9,858	9,884	+ 26
East Coast refinery crude	13,281	12,917	13,054	+ 137
East Coast pipe line crude	544	487	506	+ 19
East Coast refined products	65,545	66,340	67,757	+1,417
Total all oils	79,370	79,744	81,317	+1,573
East Coast refined stocks in bond	*750	*750	*750	.....

*Includes estimates of 100 for distillate and 650 for residual, which estimates should be added to B. of M. current totals for all oils as shown above when comparing with a year ago.

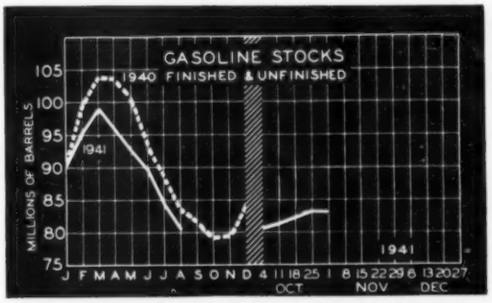
Crude Oil Production

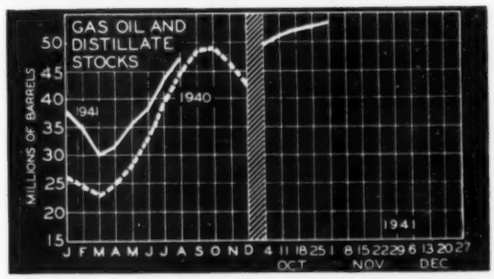
(American Petroleum Institute figures)

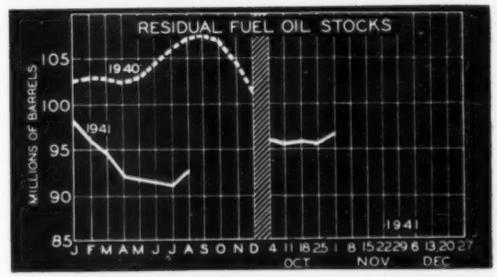
	WEEK ENDED Nov. 8 Barrels (Daily Average)	Nov. 1 Barrels (Daily Average)
Oklahoma	421,650	436,400
Kansas	238,950	237,350
Nebraska	6,200	6,450
Texas	1,473,000	1,469,950
Louisiana	348,300	342,150
Arkansas	72,450	72,400
Mississippi	64,150	63,300
Illinois	416,600	419,800
Indiana	18,750	18,000
Eastern (Ill. & Ind. excluded)	90,300	99,450
Michigan	62,850	57,950
Wyoming	80,450	79,700
Montana	21,400	20,000
Colorado	5,600	5,750
New Mexico	116,450	116,450
California	659,000	626,100
Total U. S.	4,096,100	4,071,200*

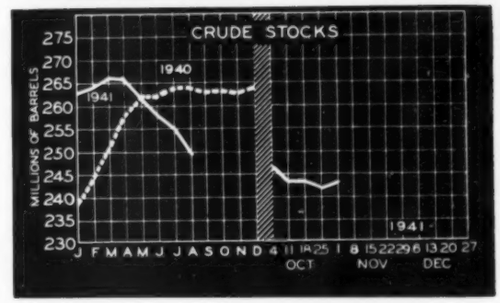
*Corrected total.

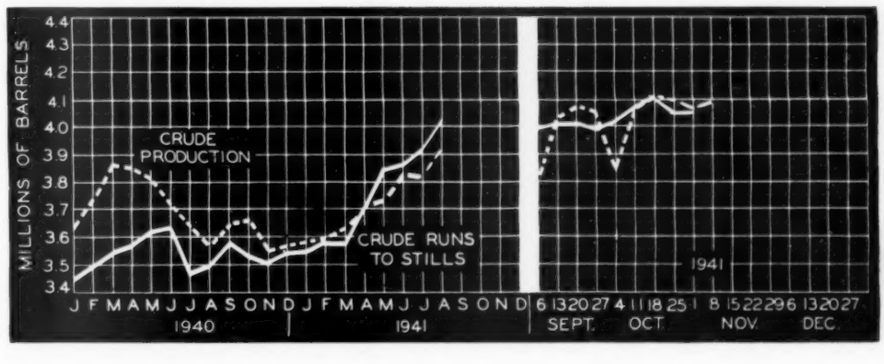
Monthly figures are actual as reported by Bureau of Mines. Weekly figures are as estimated by American Petroleum Institute on Bureau of Mines basis, except crude stocks which are as reported by Bureau of Mines. Weekly stocks figures beginning Aug. 16, 1941 and monthly stocks figures beginning July, 1941 do not include shuttle or lease-lend material formerly reported as part of inventories.











American Petroleum Institute's Ninth President

At 16, it looked like Bill Boyd was headed for a mercantile career. He had given up a job as printer's devil on the Fairfield, Tex., "Recorder" ($5 a month) and acquired a general merchandising store.

But something changed his mind —there was a bigger job cut out for William Rufus Boyd, Jr. He sold his store and started to study law under his father.

He was 19 when, by a special dispensation, he was admitted to the Texas bar. Soon afterward he became secretary to Congressman Scott Field, at that time a member of Congress from the Sixth Congressional District of Texas, and during his two years in Washington, Bill Boyd continued his legal education by attending lectures at George Washington University.

W. R. Boyd, Jr.

Returning to Texas, he began the practice of law in Teague; was elected Teague's first mayor while he was still 21 and wrote the first set of municipal ordinances.

Today, at 56, he's the ninth president of the American Petroleum Institute; has been its executive vice-president for twelve years and its assistant general secretary and counsel nine years. His association with the A.P.I. dates back to 1920 and it's said that Bill Boyd has a personal acquaintanceship with and knows by name more oil men than any other man identified with the industry.

During the NRA, President Roosevelt, acting through Administrator Harold L. Ickes of the Petroleum Code, on recommendation of the Planning and Co-ordination Committee, appointed Mr. Boyd chairman of the Board of Review. He was given the honorary degree of Doctor of Laws by St. Bonaventure College in 1934.

Mr. Boyd married Gertrude Watson of Fairfield, Tex., in 1906. They have one son: William Rufus, III.

NATIONAL PETROLEUM NEWS

VOLUME 33 WEDNESDAY, NOVEMBER 12, 1941 NUMBER 46

OPA Freezes All Oil Prices

Oil's Expansion for Defense Urged at A.P.I. Convention

By A. M. Petty, NPN News Editor

SAN FRANCISCO, Nov. 8—Three thousand oil men were on their way home today from the American Petroleum Institute's 22nd annual convention after hearing industry leaders and government officials urge them to reconcile themselves to the pinch of priorities and other sacrifices for the sake of national defense.

They were told that the petroleum industry's capacities to produce, refine and transport were being severely taxed by the defense program. Expansion in these branches and the finding of new oil reserves must be pushed, so that the industry can stay ahead of these demands.

In marketing, the oil men heard, there is ample capacity so that no new building is needed—except to serve defense or in unusual cases. But the vital function of oil marketing—both to defense and civilian needs—makes it important that the industry's marketing machinery be kept at topnotch efficiency. To this end, equipment and materials must be provided.

Co-operation with Petroleum Co-ordinator Ickes was pledged by industry leaders in their speeches and, formally, in a resolution adopted by the Institute's directors.

Mr. Ickes' statement that he hasn't the power—and doesn't want it—to be an "oil czar", was favorably received by most of those present according to comment heard after his speech Nov. 5.

PCO Called 'Temporary'

"I view the Office of Petroleum Co-ordinator as an agency created to do a necessary work during the emergency — an agency that will be discontinued when the emergency ends," declared Mr. Ickes in a last-minute insert in his speech. Advance copies had not included this statement (*NPN Nov. 5, p. 5*).

Davies Urges Expansion

Finding of new reserves, producing more efficiently and expanding refining capacity were urged by Deputy Co-ordinator Davies, speaking Nov. 6 at final general session, held at Palace Hotel.

Mr. Davies said that while 4,000,000 bbls. daily is not the lim-

(*Continued on page 25*)

Texas Crude Hike To be Withdrawn By Three Buyers

CHICAGO—An Indiana Standard official told NPN late today that his company has decided to withdraw 7c price increases posted for crude by the company's subsidiary, Stanolind Oil Purchasing Co., in north Texas.

NPN News Bureau

WASHINGTON, Nov. 11.—Consolidated and Texaco have agreed to withdraw 7c advances they posted effective Nov. 6 for crude in north and north central Texas, Office of Price Administration announced today.

This agreement followed an all-day and evening meeting of OPA officials with representatives of the above two oil companies. Indiana Standard had also been requested to attend, but due to a misunderstanding about when the meeting was to be held, no representative was present, OPA said.

Commenting upon the 7c advance, Price Administrator Henderson said:

"Prices cannot be advanced first and discussed afterward. We are studying the whole crude price situation in the Mid-Continent area and this study will be pressed forward rapidly. It will include specific consideration of whether the customary price differential on north and north central Texas crudes,

(*Continued on page 15*)

Official 'Request' Blankets Every Refiner and Jobber in the U. S.

By WARREN C. PLATT, Editor

All oil industry prices—on crude and on all products—are now frozen tight.

No one, neither major company nor Independent jobber, can advance a single price without getting written permission from Office of Price Administration and its administrator, Leon Henderson.

To get this permission, each applicant will have to show such "justification" as Mr. Henderson thinks necessary.

The only exceptions to this sweeping ruling are for incidental specialties, such as household oil and spot remover, and Independent retailers each of whom is acting entirely on his own judgment and initiative and whose total advances over any area could not constitute "concerted action" in the eyes of OPA.

Comes As A 'Request'

This drastic, nationwide restriction on the entire oil industry comes as a "request" from Price Administrator Henderson on Nov. 7. It is the most sweeping, all-inclusive "request" or semi-government order ever issued in the name of this government against any industry of such size and of so many individual units.

And this "request" to govern and regulate the details of every oil man's business is not an act of Congress, as was the prohibition law that so rigorously sought to control private action, but it is the "request" of a single man, heading a single bureau at Washington.

Each one of almost 500 refiners is held by this "request" to his prices as of Oct. 1. Each wholesale marketer or broker is barred from raising any of his prices. Each one of the 10,000 and more buyers of petroleum products who resell by barge, tank car, tank truck or tank wagon or at their service stations, is told not to advance a single price on any product to any one regardless of circumstances, unless he first gets OPA approval.

No refiner, no matter how much he needs crude, can offer more than he has been paying. No producer, no matter how much he needs the sale, can accept a higher price than he has been getting.

Prices Frozen Tight

The industry's prices are simply frozen tight against any change whatsoever regardless of circumstances—until permission has been first obtained.

The oil industry is under government control more drastic and absolute than any other industry of similar size.

This new relationship of the oil industry to government came about late last Friday in a most informal and casual manner. There was no proclamation with red seal issued to the entire industry. OPA just sent wires and letters to about 80 producers and buyers of crude oil and "about" as

(*Continued on page 14*)

New Allocation Plan To Replace Priority

NPN News Bureau

WASHINGTON, Nov. 8.—A milestone in the all-out defense program was reached this week with announcement by Supply Priorities and Allocations Board that critical materials would be allocated throughout American industry under a program that may eventually replace the priorities system.

Presumably, the amount of steel and other critical materials allocated to the oil industry would be allotted within the industry by a division of materials to be set up in Petroleum Co-ordinator's Office.

Deputy Co-ordinator Ralph K. Davies told a press conference in San Francisco on Nov. 6 that PCO is working out such a plan with Office of Production Management.

Want Month-by-Month Data

SPAB's announcement, issued on Nov. 7, said allocation program should be developed in such a way that minimum quantities of critical materials would be assured to essential industries whose operations are curtailed.

Executive Director Donald M. Nelson of SPAB was instructed to request OPM to obtain detailed production programs, industry by industry, for 1942, with sufficient data to indicate month-by-month requirements of critical materials.

Explaining significance of announcement, OPM spokesman said a certain amount of material would be allocated to each industry on an equitable basis, using some base period yet to be determined.

Significance Explained

"It means a change of emphasis," he told NPN, "in allocating materials directly for defense purposes instead of issuing a claim check that may not succeed in getting the materials."

SPAB pointed out that it probably would take a long time to get the program into operation, but that business and industry would be given greater certainty. Farm machinery is first industry to come under new system.

Priorities probably will not be dispensed with altogether as a result of the allocations system, officials said, but the need for special preference ratings will be done away with, probably to a large extent.

Three short-comings of priorities system have been noted by persons in close contact with defense operations: 1—the uncertainty business felt; 2—complications of the system; 3—priority ratings became more and more ineffective as shortages developed.

Truck Production Order Extended by OPM

NPN News Bureau

WASHINGTON, Nov. 8.—Orders facilitating production of heavy motor trucks, medium trucks and truck trailers were extended last week by Office of Production Management until Jan. 31.

Extension of orders which were due to terminate on Dec. 31, does not change basic provisions of plan. During period from Sept. 1 to Jan. 31, producers may manufacture five-sixths the number of medium motor trucks, truck trailers and passenger carriers (with not less than 15 seats) produced during the first half of the year.

Production of heavy motor trucks and other trucks specifically ordered for defense is not limited.

Dealers Want OPM to Enforce 7 P. M. Closing in U. S.

NPN News Bureau

WASHINGTON, Nov. 10 — Plans to recommend mandatory closing of all U. S. service stations at 7 p. m. daily during present emergency, by means of an order from Office of Production Management, were gaining headway today, reported Harry Wainwright, research director of Washington Retail Gasoline Dealers, Inc.

This move started Nov. 5 when the Washington dealers held a meeting in the auditorium of the Interior Department and gained dealer approval on basis that labor was not available for night work and that electric power would be saved by closing at 7 p. m.

Mr. Wainwright estimated that stations which stay open at night in this area must pay from $202 to $320 monthly additional.

OPA Sets Copper 'Ceiling'

WASHINGTON, Nov. 8.—In his first step to stabilize prices of all products made of copper, brass or other copper-base alloys, Price Administrator Leon Henderson Nov. 5 asked manufacturers of copper wire and cable, used to conduct electricity, not to exceed their Oct. 15 prices.

PCO Starts Nationwide Drum Survey; Wants 5,000,000 Switched to Wood

NPN News Bureau

WASHINGTON, Nov. 10. — Aimed at determining how 5,000,000 wooden barrels can best be substituted for the same number of steel drums in the petroleum industry, Acting Petroleum Co-ordinator Robert E. Allen has written to chairmen of the 5 district refining committees requesting that they submit specific recommendations.

This data is to include reports on products such as asphalt and heavy grease that can be shipped in wooden barrels and the approximate number of wooden barrels to be used in each district.

Letter Quoted

Quoting from Mr. Allen's letter:

"As a result of discussions with the Office of Production Management concerning the use of steel and tin in the manufacture of containers for petroleum products, Recommendation No. 14 was issued on October 25. A plan for conserving metals by substitution in this use may be most effectively carried out on the basis of specific studies of industry requirements and practices. Accordingly, I am requesting that your committee make specific recommendations to this office as to the following:

"(1) the manner in which the petroleum industry may best substitute, during the next twelve months, 5,000,000 wooden barrels for an equivalent capacity of steel drums; and

"(2) the uses for which containers made of glass or other available materials may be employed in place of steel and tin containers in the handling of petroleum products to the extent that such substitution proves to be necessary."

Gives Basis for Figure

The figure of 5,000,000, Mr. Allen said, is based on OPM figures indicating additional capacity of the cooperage industry and is related closely, on the basis of that capacity, to the percentage of steel drum output normally used by the petroleum industry.

OPM has asked PCO to revoke Recommendation 14, which asked oil industry to curtail use of steel drums, reliable quarters said today. OPM officials denied this last week.

As explained by a well-informed source, however, OPM originally asked PCO to invite district committees to Washington for discussion of means to curtail use of steel in containers. OPM was said to have been surprised at "drastic" recommendation PCO issued.

Mid-Co Refineries Move to Encourage Steel Drum Return

NPN News Bureau

TULSA, Nov. 10. — Several Mid-Continent suppliers of lubricating oils have adopted plans intended to encourage return of used steel drums.

In stressing need for a more intense campaign to stimulate return of drums to lube suppliers, R. W. McDowell, vice-president of Mid-Continent Petroleum Corp., said:

"We are experiencing increasing difficulty in obtaining new drums because of defense requirements and steel priorities. So acute has the situation become, in fact, that we are obliged to seek the co-operation of each distributor in further endeavoring to solve our common problem."

He pointed out that increased allowances of $2 for first-class 55-gal. steel drums and $1.50 for second-class 55-gal. and first-class 30-gal., effective Sept 8, had failed to bring in necessary volume of used drums.

Requires Drum Return

As result, Mid-Continent Petroleum Corp. has announced it will not guarantee drum deliveries of lubricating oil unless the distributor returns the number of drums required for the shipment.

To enforce this policy to all distributors alike, the refiner said buyers will be expected to accompany each lube order with bills of lading covering shipment to Mid-Continent of the required number of used drums.

Company's allowance, increased 25c on Sept. 8, remains in effect.

Another lube manufacturer has notified buyers that prices quoted in drum lots are subject to revision. These quotations are predicated on availability of second hand drums. If used drums become scarce and higher priced new drums are substituted, price quoted on the lube will be automatically increased to cover higher packaging costs.

Drums Are 'Traded'

The Texas Co. has established a policy of billing customers on the basis of "bulk shipments," with understanding transaction involves trading of drums between supplier and buyer. Should buyer fail to return necessary drums within 90 days after date of transaction, he will be charged $3.50 each for the drums.

Texaco has also set up a

price of 50c for all 100-lb. and 50-lb. grease pails returned.

Many suppliers of refinery-sealed canned oils are considering use of paper containers. Others believe the old-style lubsters, if still available, will be dusted off and placed on the pump island.

Automobile Output Sharply Curtailed

NPN News Bureau

CLEVELAND, Nov. 8.—Office of Production Management's plan to cut passenger car output of 1942 models is swinging into its fourth month with the automotive industry still to feel the real pinch later this year.

Production of 1942 models during the first 6 months of the model year, which began August 1, will be held to 1,228,065 cars (last year: 1,928,517), through OPM's efforts to divert car manufacturing facilities to national defense output. This will be an overall reduction of about 36%. But December production will be cut 48.4% below last year and January: 51%. So far—during August, September, October and November—the automotive industry has been working under a 26.5% curtailment.

The following table, released by OPM's division of civilian supply, shows how new car production will be hit by January's 51% curtailment:

Passenger Car Allotments

(For Nonmilitary use)

Company	Allotments Jan. 1942	Production Jan. 1941	Percentage decrease in Allotments
General Motors Co.:			
Chevrolet	45,180	104,079	56.6
Buick	16,402	36,615	55.2
Pontiac	14,358	28,528	49.7
Oldsmobile	11,753	25,973	54.8
Cadillac	2,874	6,374	54.9
Total	90,567	201,569	55.1
Chrysler Corp.:			
Plymouth	25,184	52,118	51.7
Dodge	11,863	27,666	57.1
Chrysler	6,028	18,187	66.9
DeSoto	4,196	9,383	55.3
Total	47,271	107,354	56.0
Ford Motor Co.:			
Ford	32,307	69,057	53.2
Mercury	4,426	11,129	60.2
Lincoln-Zephyr	1,276	2,400	46.8
Total	38,009	82,586	54.0
Other motor companies:			
Studebaker	8,834	7,486	[1] 18.0
Hudson	6,476	5,814	[1] 11.4
Nash	5,500	6,946	20.8
Packard	5,771	4,479	[1] 28.8
Willys-Overland	1,944	2,116	8.1
Crosley	476	.....	....
Grand total	204,848	418,350	51.0

[1] Increase.

To Allocate Cobalt

NPN News Bureau

WASHINGTON, Nov. 8—Cobalt, used as an alloy for steel in the production of high-speed cutting tools, was placed under a direct allocations system today. Priorities Division of Office of Production Management will administer the system.

'After Work' Air Raid Drills Held Not Chargeable Time

NPN News Bureau

WASHINGTON, Nov. 7—Air raid protection training programs for employes in defense plants, when voluntary and after regular hours, will not ordinarily be considered "hours worked" the U. S. Department of Labor Wage and Hour Division announced today.

The announcement was made in response to a specific inquiry by a shipyard concern constructing vessels for the government and stated that since such programs are not ordinarily restricted to the hazards of the job at hand and bear no relation to the personal responsibilities of employes in doing their job safely and well, the time spent in the training program will not be considered hours worked. However, the division stressed that such training must be voluntary and take place outside the regular work day.

PCO Tells Needs Of Oil Industry For Iron, Steel

NPN News Bureau

WASHINGTON, Nov. 8.—To meet estimated defense demand in 1942, the marketing division of the oil industry will need 181,000 tons of iron and steel, the Petroleum Co-ordinator's Office said today in releasing overall figures for the oil industry next year.

Oil's total iron and steel demand next year will be 5,846,000 tons, PCO states. Estimated needs for the industry's 3 other main divisions are: Production—3,175,000 tons (on basis of more than 30,000 wells); Transportation—1,843,000 tons (for pipelines, tank cars and tank trucks); Refining—647,000 tons (including aviation gasoline facilities).

Makes Survey for OPM

PCO prepared these estimates for Office of Production Management.

In emphasizing the importance of oil industry needs for steel in the present defense crisis, PCO points out that only construction, transportation and machinery industries outrank the oil business in their requirements. Normally, oil industry needs for steel ranks second to transportation, the latter including the rail and automobile industries. Of the production division's need for 3,175,000 tons of iron and steel, 1,817,000 are tubular goods, says PCO pointing out that the production branch is probably the nation's greatest user of steel due to fact that most of the steel casing used in wells is never recovered.

OPM Reports Anti-Freeze Supplies Up

NPN News Bureau

WASHINGTON, Nov. 10.—Danger of an anti-freeze shortage this winter has been largely overcome, principally because of action by Price Administrator Leon Henderson who is also Director of Civilian Supply for the Office of Production Management, OPM officials said last week.

Defense demands for glycol and methanol have been heavy and it is difficult to increase the supply of these two types of anti-freeze. But Mr. Henderson found a way to free a considerable amount of ethyl alcohol for anti-freeze, which probably would have gone into gun-powder.

He made arrangements for several whiskey distillers to make corn alcohol from government grain. Powder manufacturers will use this corn alcohol, which, incidentally, costs more money. Production will be about 2,000,000 gal. a month.

Takes Other Action

Mr. Henderson also increased the total supply of ethyl alcohol available for all purposes by about 10% when he permitted the Publicker Commercial Alcohol Co., of Philadelphia, to manufacture nearly 4,000,000 gal. from raw sugar for sale above established maximum prices.

He allowed this price differential because sugar is a more expensive raw material than blackstrap molasses which is normally used for ethyl alcohol.

May be Some 'Squeeze'

The Army and Navy are not requiring an "immoderate amount" of anti-freeze, officials said, expressing confidence that the situation has been taken care of and that supplies will be adequate this winter.

However, there may be a "little bit of a squeeze" in some sections, because distribution mechanism is "crude", officials claimed.

Another factor brightening the anti-freeze situation is the large carry-over from last year.

Burner Shipments Down

NPN News Bureau

WASHINGTON, Nov. 7.—September shipments of oil burners totaled 34,707, compared with 41,490 in same month a year ago, Census Bureau reported today. Figures were based on reports from 159 manufacturers. Shipments in September, 1940, were made by 170 manufacturers.

Filing Date Extended In A. P. I. Suit

NPN News Bureau

WASHINGTON, Nov. 10.—Defendants in Justice Department's suit against American Petroleum Institute, 22 major oil companies and their alleged affiliates now have until Jan. 19, 1942 to file answers.

This order extending the filing date was signed Nov. 5 by Judge David A. Pine, District of Columbia's Federal District Court.

Nothing further could be learned here today regarding report that negotiations for an early settlement were under way, but one source said this was still a strong possibility. *(For earlier details, see NPN Nov. 5, p. 5—Ed.).*

Gasoline Stocks Up In East, PCO Says

NPN News Bureau

WASHINGTON, Nov. 8.—Gasoline stocks on the East Coast rose 511,000 bbls. for week ending Nov. 7, Petroleum Coordinator's Office announced today. Light fuel oil stocks were up 3,731,000 bbls. over the same period in 1940 but heavy fuel oils were 1,238,000 bbls. lower, PCO reported.

East Coast crude stocks were 519,000 bbls. below last year's stocks at this time. These figures were released as part of PCO's regular weekly East Coast stock report.

Total East Coast inventories of gasoline and light and heavy fuel oils on Nov. 1 were 1,228,000 bbls. greater than on Oct. 25, according to American Petroleum Institute.

Details follow:

(Figures in Barrels, 000 omitted)	Oct.	Nov.	Difference
Crude oil	12,917	13,054	+ 137
Gasoline	19,547	19,220	— 327
Light heating oils	20,771	21,519	+ 748
Heavy fuel oil	10,907	11,714	+ 807
Totals	64,142	65,507	+1,365

Following table, based on Bureau of Mines figures, compares current stock situation with last year's:

(Figures in Barrels, 000 omitted)	Nov. 2, 1940	Nov. 1, 1941	Difference
Crude oil	13,573	13,054	— 519
Gasoline	18,709	19,230	+ 511
Light heating oils	17,788	21,519	+3,731
Heavy fuel oil	12,952	11,714	—1,238
Totals	63,022	65,507	+2,485

Yocom Still Director Of PCO Information

NPN News Bureau

WASHINGTON, Nov. 11.—Contrary to a report carried in NPN, Nov. 5, p. 13, Herbert A. Yocom still heads the Information Division in Petroleum Coordinator's Office. Walton Onslow is on special detail coordinating information, public relations, sales promotion and advertising.

OPA Freezes All Oil Prices

(*Continued from page* 11)

many "leading marketers" and refiners, announcing the new condition.

Expect Newspapers To Inform Others

Today, when asked just who was to consider himself on notice as to this new "order," OPA said that it depended upon those notified and the newspapers to tell the rest of the oil industry of its new status to government. So this news story is, presumably, part of the "legal notice" to every reader that his prices were frozen last Friday, Nov. 7.

Owing to Tuesday being Armistice Day, most oil offices were closed. Few people therefore received any information regarding this price "request".

However, both the president and general counsel of the Ohio Petroleum Marketers Assn. read the "request" in Tuesday morning's OILGRAM. They at once issued statements protesting its drastic character.

Comments From Oil Men

President E. V. Weber at Cincinnati said it would seem that a more constructive way of handling prices could have been found than this "blunt and arbitrary thrusting of the notice upon them."

Hubert B. Fuller, general counsel of the O.P.M.A., at Cleveland, said that jobbers are being badly squeezed between rising costs of all kinds and the ceiling that government had already placed on gasoline and kerosine and that "orders of the character issued by Mr. Henderson threaten the blackout of small business in the oil industry."

At the directors' meeting of the O.P.M.A. Thursday, Nov. 13, the subject will be investigated, said President Weber.

The full statements of both Messrs. Weber and Fuller are printed in this issue.

Because oil offices generally over the country were closed, no other statement of plans of action in regard to the "request" could be obtained.

Authority by Proclamation

At present, OPA is operating under a presidential proclamation. OPA Administrator Henderson says this is all the authority he needs to enforce his "requests," but he had asked for a specific law giving him full authority on prices, and he has been careful to style his wishes to industry as "requests" and not as "orders".

The major oil companies have acceded to his "requests" and submitted data and application for price advances the last few months. However, the last crude advance in the Mid-Continent the other week got off without OPA's benediction with the result that heads of the chief crude buying companies were ordered to "attend meeting here Monday". Two companies sent representatives and they, today, finally announced cancellation of their 7c crude advances in north Texas of a week ago. (See separate story in this issue—Ed.)

Pennsylvania refiners have held down some of their product prices at the "request" of OPA and Pennsylvania producers are still trying to get approval for a price advance which was cancelled in August. Gulf Coast refiners have been "requested" not to sell 80-octane gasoline above 6.5c though some sales at 6.75c for 81 and other higher octane numbers have been reported. These Gulf Coast refiners have been fighting vigorously the OPA "ruling" against them.

Oil men have pointed out, as does General Counsel Fuller of the Ohio association today, that while oil companies do not want to have any "inflation" of their prices, they do want to be covered on their rising costs. These costs have been going up both for material and for operations and have been advancing more rapidly than the increase in volume has cut down operating expense.

Oil men today are wondering how OPA expects to pass on all the myriad of deals that all the major companies and all the 10,000 oil jobbers are daily making with hundreds of thousands of customers. It may be comparatively simple for a major company to hold its tank wagon prices on gasoline and kerosine at a level, but how about all the different grades of oil and grease, and other grades of the lighter products, that are tied up with all sorts of considerations of rent, equipment, credit, etc? Then there are the industrial sales, the commercial business that generally is transacted on prices and terms individual to each transaction. One cannot well cost account any one of these deals, made to meet special and competitive conditions, oil men point out, but they must take the grand total.

Small Oil Man Will Suffer

While major oil companies, even with staffs of accountants and lawyers and economists, will have their troubles setting forth "justification" for price changes in tens of thousands of transactions, oil men are wondering what the small oil man is going to do in preparing his letter of "justification" for any price advance? Such a small business man is none too well equipped with a detailed accounting system and his attorney is a general practitioner and not a specialist on oil.

And then besides, from now on particularly, it may be necessary in nearly all oil business to raise prices a bit in a multitude of transactions. The small oil man and his attorney will be busy sending in applications every week. All of this will mean more expense to the oil man, less time to spend on his business when it most needs him, and a waiting for approval from Washington.

If the industry produces price change applications in the detail that some oil men expect, OPA will need all the million and a half men in the new army to handle the requests.

OPA's REQUESTS That Freeze ALL Oil Prices

"Letter to marketers" sent to some "80 leading marketers" and by them and the newspapers to be "served" on the rest of the industry.—

"I have recently reviewed the current price situation in the petroleum industry. As a result of this review, this Office requests that, in the interest of more efficient administration, no price advances be made in petroleum or petroleum products without prior notice and approval from this Office. Price increases to be submitted for our approval will include contract or spot prices of petroleum and all petroleum products, including refinery, tank car, tank wagon, barge, retail service station and other prices quoted by you. We request that we have at least two weeks' notice before the date for which an increase is planned. All matters will, of course, be given our prompt attention.

"In connection with applications for approval, we should be furnished a complete statement, in duplicate, showing the justification for the proposed increase. Upon request, this Office will indicate the exact data appropriate to specific adjustments. We request that this Office be informed by November 18th of all price adjustments made in petroleum products since October 1, 1941.

"We look forward to a continuance of the co-operation from you and other members of the petroleum industry which we have had in the past months.

"Will you please acknowledge receipt of this letter by November 15, 1941."

Supplemental "clarification" letter sent Nov. 11 to "80 leading marketers,"—

"Supplementing our letter of Nov. 7 regarding presentation of proposed price advances of petroleum and petroleum products to this office prior to putting such contemplated increases into effect, we wish to clarify our request for information on price adjustments made since Oct. 1, 1941.

"It is our intention that you advise us only of those prices

Send NPN copy of your Protest

To keep all oil men informed as to how the industry is receiving the price freezing "requests" of Office of Price Administration, NPN will appreciate receiving from oil associations, individual oil men and oil companies copies of any protests or arguments or letters they may issue or send to OPA in regard to this last "request".

Please send such information to any of NPN's offices: 1213 W. 3rd St., Cleveland; World Building, Tulsa; 59 E. Van Buren St., Chicago; 50 W. 50th St., New York City; or National Press Building, Washington, D. C.

which were advanced since Oct 1, 1941, for which no prior written approval had been secured from this office, and that such notification be confined to prices of crude oil, gasolines, kerosine, distillate fuels, light and heavy burning oils, asphalt and lubricating oils. It will not be necessary to furnish information covering specialty products such as household oil, spot remover, and other items comprising only a very small percentage of your volume."

This, it was explained, concerned prices that had been advanced and also to any proposed advances on these products.

Verbal "explanations" offered Nov. 11 to NPN to further clarify the original price "request",—

Asked by NPN if OPA wanted to be notified by every single Independent service station operator whenever he changed a price, an OPA officer said that this would not be necessary as there are "too many of them"; but that service station prices cannot be raised by oil companies nor raised by the Independent dealers as the result of any "concerted action."

Asked by NPN if OPA should be notified of any advances in prices on lubricating jobs, OPA said "no."

Letter, or telegram, sent to leading crude oil producers and buyers Nov. 7th.—

"On October 10, 1941, this Office issued a press release advising the petroleum industry that a comprehensive investigation of the Mid-Continent crude oil situation was being undertaken by the Office of Price Administration in co-operation with the Office of the Petroleum Co-ordinator. This study was undertaken as a result of suggestions from several leading Mid-Continent producers that a general crude oil price increase was desirable. This study is now under way.

"Pending completion of this survey, the industry is requested to make no increase in the purchase price of crude oil over the prices prevailing as of October 1, 1941.

"May we have your acknowledgment of this letter and your acceptance of this request. Your co-operation will be appreciated."

'Blunt, Arbitrary' Action, Hit by Ohio Jobber Head

Commenting on the price-ceiling action by the Office of Price Administration, Eric V. Weber, Cincinnati, president of the Ohio Petroleum Marketers Assn., late today made this statement:

"Petroleum marketers in Ohio, as well as the thousands of others throughout the land, doubtless will regard the price-ceiling action of the Office of Price Administration with grievous alarm. With three recent advances in the tank car price of gasoline, increased labor and equipment costs, and enormously growing taxation, the petroleum jobber in Ohio continues to struggle along desperately on a perilously close margin of profit, wondering how much longer he can hang on without extinction.

"Present narrow margins already have reduced employment greatly, and the mounting tax load has become a serious scarecrow to the small businessman. It would seem that there should be a more constructive means to the handling of the price problem than the blunt, arbitrary manner employed in thrusting this notice upon people who were unprepared for and were not expecting it. The facts are, Ohio jobbers and retailers badly need better prices than those prevailing.

"The board of directors of the Ohio Petroleum Marketers Assn. will give serious consideration to the subject at their regular monthly meeting this week."

Jobber Counsel Sees 'Blackout' Of 'Small Business' in Oil

Hubert B. Fuller, Cleveland, general counsel of Ohio Petroleum Marketers Assn., late today said orders such as the price-freezing "request" of Price Administrator Henderson threatens the "blackout of small business in the oil industry." Full text of his statement follows:

"The notice served upon the oil industry on November 7th, by Price Administrator Leon Henderson, requesting that no price advances be made in petroleum products without prior notice and approval from his office, has particularly disturbing implications for the members of the Ohio Petroleum Marketers' Association and the some ten thousand other small business men engaged in the distribution of petroleum products throughout the United States.

"An order of this character loses sight of those factors which must control price determination in any industry. For several months the situation of petroleum jobbers has been precarious due to increases in tank car prices and the freezing of tank wagon prices. During this period the operating costs of petroleum jobbers have substantially increased as the result of higher prices for all materials purchased by them for use in their marketing operations, and particularly as the result of the increases in wages which have been forced upon them by the competition of defense industries.

"It is a matter of common knowledge that petroleum distributors have been forced to grant material wage increases in order to hold present employees or to replace those who have been attracted by the high wages which now prevail in other lines. Unless jobbers are permitted to obtain a price for their products which will permit cost recovery, their situation will become increasingly precarious.

"It must be remembered that most jobbers come within the category of small business men who are dependent for their continued existence upon current operating profits. They have no substantial reserves or resources upon which they can draw to meet operating losses.

"Orders of the character issued by Mr. Henderson threaten the blackout of small business in the oil industry."

Texas Crude Hike To be Withdrawn By Three Buyers

(*Continued from page* 11)

which is nine years' standing, is still justified. This applied to differentials in other areas as well. In the meantime prices, which are generous compared with those obtaining until recently, should remain stable."

Claimed 'Adjustment'

Consolidated and Texaco, at yesterday's meeting contended their price advances were "adjustments" rather than increases. However, Mr. Henderson said the price for a substantial volume of production was 7c higher than before the increase and that any difference in nomenclature is irrelevant. Moreover, he said that the advance could be interpreted elsewhere as an effort to apply the principle of "squatter sovereignty" to dealings with OPA.

OPA said all buyers in the north and north central Texas fields are expected to return to former levels.

Asked for comment as to whether Indiana Standard specifically agreed to withdraw its advance, an OPA spokesman told NPN that this company was a comparatively small buyer in this field and that the company would probably follow the withdrawals by Consolidated and Texaco.

OPA's Wire Quoted

Following is telegram Mr. Henderson sent to H. F. Sinclair, Consolidated; W. S. S. Rodgers, Texaco; and E. G. Seubert, Indiana Standard:

"This office has advice that your company has increased purchase price north Texas crude oil. This increase does not have approval this office. Attend meeting here 9:30 a.m., Monday, Nov. 10."

Thompson Favored Hike

Chairman E. O. Thompson of the Texas Railroad Commission urged approval of the 7c advance by OPA in a wire to Price Administrator Henderson on Nov. 10. Mr. Thompson said the advance would save 300,000 stripper wells from abandonment and erase unfair price differentials as compared with Oklahoma crude.

Californians Aim at Oil 'Waste' Showdown; Are Foiled in Attempt to Subpoena Ickes

Special to NPN

SAN FRANCISCO, Nov. 8.—A showdown on charges of "waste" in the California oil industry loomed today as the state legislative oil committee planned a letter to Petroleum Co-ordinator Ickes asking for his definition of "waste" and how to eliminate it.

This climaxed efforts of the committee to get Mr. Ickes to appear in person at hearings held here Nov. 6-7 and explain the charges he made in speaking Nov. 5 before the American Petroleum Institute meeting.

Issues Subpoena for Ickes

Speaker Garland of the Assembly, chairman of the state legislative committee investigating the oil industry and how the state can co-operate for national defense, told the committee hearing Nov. 6 that he had invited Mr. Ickes to testify.

Upon Mr. Ickes declining to appear, Speaker Garland said he "reluctantly had a subpoena issued for Mr. Ickes to get him before us."

But the sheriff's deputy served Mr. Ickes' secretary, Milburn P. Akers, by mistake and the co-ordinator left town before another subpoena could be issued.

This prompted newspaper stories that Mr. Ickes had "ducked out" of town to avoid the subpoena, that the process server from sheriff's office had allegedly represented himself as a "G-Man" to gain entrance to the Ickes hotel apartment, that the Ickes staff had called real "G-Men" to the rescue and that in the turmoil the co-ordinator had slipped out to the train without being served.

Indications are, however, that the Ickes party had planned to leave the evening of Nov. 5 anyway. The deputy sheriff later denied that he had posed as a "G-Man" (see news item on this page—Ed).

Davies Also Invited

With Mr. Ickes gone, the Garland committee is reported to have invited Deputy Co-ordinator Davies to appear and explain Mr. Ickes' remarks about "waste". But Mr. Davies did not appear.

So, the committee decided to write Mr. Ickes and ask him to define the term "waste" as applied to the California oil industry and to furnish information as to "where and how" it is occurring in the industry. Mr. Ickes was asked for "suggestions and advice" as to how any "wasteful" practices could be corrected.

Chairman Garland will also take up with the Petroleum Co-ordinator's Office and Army and Navy officials the matter of aiding California Independent refiners, giving them a share of government and lease-lend business. This was in response to a plea by B. E. Devere, president of Independent Refiners Assn. of California, Inc., who appeared before the Garland committee Nov. 6 at San Francisco.

Unless something is done for the California Independent refiners, more and more will be forced to shut down, Mr. Devere told the legislative committee.

At present, there are 70 Independent refineries in California with a daily output of 220,960 bbls. of skimming capacity and 19,535 bbls. of cracking capacity, or 23.01% and 15.78%, respectively, of total skimming and cracking capacity on the Pacific Coast, he said. On Oct. 1, 1941, 28 of these plants were closed down, representing 36.95% of Independents' skimming capacity, he added.

Small Units Hard Hit

"Burdens of national defense," Mr. Devere continued, "have fallen and will continue to fall equally on all operating units of the industry, regardless of size, in the form of increased taxes, higher labor and material costs, restrictions on operating and maintenance supplies, and other hampering and expensive regulations.

"In California the benefits accruing to the oil industry because of defense orders have quite naturally run to the large companies due to their ability and readiness to supply commodities now most vitally needed, and these specialty products command substantial and profitable prices.

"The Independents are barred, by their lack of size, from this field. Prices quoted for those products which most of the Independents can manufacture, are sufficiently low to prevent the average independent unit from competing for this volume business because of his higher refining costs, without the cushion of producing and transportation profits to fall back on. The prevalent practice of intercompany use of pipelines and accounting exchanges of products by the integrated companies, provides for them an important advantage over the Independents to whom such facilities are not available."

Independents Vital in Defense

Pointing out that Co-ordinator Ickes has recently stated that a shortage of refining capacity impends, Mr. Devere pointed out that the scattered, Independent units are less vulnerable to sabotage or other forms of attack. The Roosevelt Administration has repeatedly indicated that it wants small enterprise to share in the defense program, according to Mr. Devere, who urged that steps be taken to protect the small unit's ability to participate.

Mr. Devere then presented a 5-point program for aiding the California Independent refiner, as follows:

"1. The Government creating stock piles of those products which will unquestionably be needed in vast quantities should the military and naval situation become acute; these products to be accumulated in existing tankage or isolated inland storage to be constructed for that purpose.

"2. Gathering cargoes of gasoline suitable for use in ordinary military or naval equipment, not requiring maximum performance fuels.

"3. Requiring prime contractors of aviation fuels to subcontract with independents for straight run base stocks, such requirement being reasonable in that public monies are available for use by majors for construction of 100 octane plants with probability of assured long term profitable markets, and size prevents independents sharing in this subsidy.

"4. Arranging for participation by independents in Lease-Lend purchases for Russia and Britain; routing portion of British requirements from Pacific Coast ports at which independents can obtain terminal facilities.

"5. Concede independents same preference on Army and Navy bids for commercial grades of gasoline, as that allowed higher cost units in other industries, giving recognition to the principle voided by certain administration officials that disparity in manufacturing costs should be overlooked in order to keep all industrial units functioning.

"All of the above recommendations are made on the assumption that any or all commodities moved must return to the seller, more than the cost of manufacture."

'Only Man in Sight' Was Someone Else So Sheriff Missed Ickes with Subpoena

Special to NPN

SAN FRANCISCO, Nov. 8—The deputy sheriff who attempted to serve a subpoena on Petroleum Co-ordinator Ickes said he was told by Mr. Ickes' secretary that his boss had refused to testify before a state legislative committee here on the ground that the committee was seeking "to exploit the oil industry."

The deputy, Jack E. Finney, who handed the subpoena to Mr. Ickes' secretary "by mistake", in an interview with an NPN representative, quoted the secretary (Milburn P. Akers) as saying:

"This is a lot of cheap political trickery. Mr. Ickes had already been invited to appear before the committee and had declined. There was no reason to resort to a trick like this subpoena."

Finney said he entered Mr. Ickes' suite at the Huntington apartment hotel and handed the subpoena to the "only man in sight," presuming he was Mr. Ickes.

"I had never seen Ickes," the deputy said, "and didn't know the difference until the man I gave the papers to said he was Akers, the secretary. It was then too late to do anything about it."

Finney asserted Mr. Akers was in the midst of packing when he visited the apartment, which would discount local newspaper stories that Ickes fled town specifically to avoid service of a subpoena.

The petroleum co-ordinator, who was here to address the American Petroleum Institute's convention, left the city a few hours after Finney's visit.

Denies 'G-Man' Stories

The deputy sheriff also emphatically denied stories in the local press that he posed as a "G-man" in an attempt to get into Mr. Ickes' apartment, prompting the co-ordinator to summon real "G-men" to the scene.

He said he had told the clerk of the establishment he wanted to see Mr. Ickes on personal business, and had been given admittance to his rooms on that basis.

OEM Issues Booklet

NPN News Bureau

WASHINGTON, Nov. 8.—A 72-page booklet explaining the functions of administration of the Office of Emergency Management has just been published. The booklet briefly outlines the development of the defense agencies, explains the authority under which each was created, describes its functions, and lists its staff.

Copies may be obtained from the Supt. of Documents, Washington, D. C., for 10c.

THE Editor's PAGE

Readers Comments and Opinions will be much Appreciated by—WARREN C. PLATT, Editor and publisher, Penton Building, Cleveland, O.

Ickes, at Last, Pledges No Czardom Over Oil

SECRETARY of the Interior and Petroleum Co-ordinator Ickes at last undertakes to end years of controversy by denying that he "has the power or the will" or that the federal government now wishes to "control" the oil industry. This statement he made last week at the annual meeting of the A.P.I. in San Francisco.

Much time and effort of both government and state officials and the oil industry might have been avoided if Ickes had made this statement six years ago and, by his actions and the actions of the New Deal, showed that he meant it.

Ickes' denial of a wish to control the industry comes after he and Roosevelt stood pat for two years behind a bill of their authorship in Congress that was filled with "sleepers" of the most arbitrary and even illegal kind that would have given Ickes and Roosevelt absolute control over oil and natural gas. Ickes and Roosevelt stood pat on this bill while the governors and conservation officers of 11 oil states and scores of oil men appeared at Washington in direct and vigorous and finally, effective opposition. During that long fight made by oil men and state officials for the freedom of the oil industry, neither Ickes nor Roosevelt offered to give way on a single phrase of any of the control they had written into the bill.

Ickes' denial of an intent to control the oil industry also comes after some months of his undertaking to exercise arbitrary direction over the industry and the consumers as well, during the late "oil shortage" of the East Coast, a control which was ended chiefly by a pronouncement of a Senate investigating committee that the "shortage" was one of "surplus".

Ickes is now taking the position he should have taken years ago. The industry would have been further down the road of scientific conservation if he had, and Ickes would not have had this last effort at "preventing" an East Coast "oil shortage" blow up so loudly in his face.

We know that every oil man sincerely hopes that Ickes means just what he told the Institute last week, and every oil man, we know, hopes that he speaks for Roosevelt and the New Deal. However, that may be too large an expectation these days.

WE hope that this admission of Ickes' is recognition by him of the great job that oil and all other industries have to do in this war period. And we hope that it is recognition by Ickes and the New Dealers that the oil industry is an effective, efficient and patriotic industry that is far more competent to meet its great problems through its own judgment and ingenuity than by his imperial fiat.

However, Ickes and the government can be of great assistance in aiding the industry in working out those problems, particularly if Ickes sticks to what he has just said—that he is not, and that he is not going to try to be, the czar of the oil industry.

If Ickes and Roosevelt and their New Dealers will make their conduct conform in every way with Ickes' pledge of last week, Ickes will at last stand a chance to be a big man, a statesman, before oil and American industry.

Ickes has shouldered a real responsibility, but one that NPN hopes he will successfully carry out.

Bill Boyd, a Neutral, Promises a Still Greater A.P.I.

WHEN a man you have known and watched for 20 years finally reaches the place of greatest honor in a great industry, you cannot help but think that this is a pretty good world after all and that the men who constitute it make their awards after all to those who deserve them.

This is how we feel and how we know those in the oil industry who know him feel, about the advancement of W. R. Boyd, Jr., to the position of president of the American Petroleum Institute. This promotion was first made last month by the executive committee of the A.P.I. following the death of Axtell J. Byles. It was made again by election of the board of directors at the annual meeting at San Francisco last week.

It was right after the close of the last war that Bill Boyd went to work for the newly born institute. His task then was that of being general assistant to the rest of the "institute" which was Bob Welch, first secretary and general counsel. Chiefly, as the writer recalls, his job was to look up a two-bit sized office for the new venture that was to represent the oil industry, buy some furniture and then see that the underwriters sent in their checks to pay the bills.

Bill Boyd had been the major domo behind the scenes of one of the numerous big drives for an "all time peace" that came from the last war. Prior to that he had been an attorney down in East Texas and had been honored by being mayor of his home town of Teague, Fairfield county, Texas, a place where, with all due respect to Bill, two roads crossed almost without pausing.

Bill Boyd and Bob Welch built what is now the great American Petroleum Institute; a truly great institution in American industry. They first laid down the principle that they, as representing the institute, would espouse no idea or cause that was not definitely and sincerely demanded by a large part of the industry; that they would not go barking around strange trees on the long chance that there might be a coon up above.

On this principle many activities have been built, activities that have all grown and been of great aid to the industry, and activities none of which have had to be abandoned.

THE average man in the street may have the impression that the institute is just a bunch of major oil companies. But if that man will look in on an annual meeting, attended by 3000 oil men from all over the country, and then spend a few minutes with each of the scores of committees in session, committees that are working on the technical problems of the industry, committees that are clearing and carrying on ideas for better products at lower prices, that man in the street will find an institute of men, skilled men, able men and the major oil company complex will fade to the back of the picture.

Bill Boyd has all these years been the organizer and the manager of all this machinery. He has selected the personnel, done the hiring and the firing, kept the activities on the right track, worked for harmony of action among the various elements in the institute's membership and then gone out on many of the major jobs of the Institute and appeared as an industry witness before Congressional and other committees. Presidents have come and gone but Bill Boyd has kept the whole machinery moving and in the right direction. He has had far more to do with the greatness of the Institute—and it is great—than most men realize.

SO IT was a most fitting recognition of skill and ability that, with the coming of the vacancy in the presidency this fall, Bill Boyd was promoted to head the institution which he has done so much to build from its very inception.

Without sounding any blare of trumpets, the writer believes that Bill Boyd will spread the influence of the institute out to include still more divergent elements in the industry. Bill Boyd is neither "major" company nor "Independent"; neither of the oil producers nor of the refiners nor of the marketers. He is now the supreme head of a great organization that should represent all of the oil industry. The more it represents all of the industry the greater will be Bill Boyd's glory. And we think he can and will do it.

We do not know of a decision that has been made by any industry group that gives us more personal joy and satisfaction and more hope for a better-adjusted oil industry in the future than this election of Bill Boyd to be president of the great American Petroleum Institute.

OPA Asks Gulf Coast Refiners To Comply With 6.5c 'Ceiling'

NPN News Bureau

WASHINGTON, Nov. 8. — While Office of Price Administration states that it has no knowledge of any sales of 80 octane ('39 research) motor gasoline being made at above 6.5c telegrams were sent this week to 22 Independent Gulf refiners "in view of quotations appearing in trade publications of 6.75c per gal. cargo price."

The 6.5c is "ceiling" agreed upon by OPA and Gulf refiners for 80-octane moving in cargo lots with proper differentials above 6.5c for high quality gasoline. One source at the Gulf states that the vast majority of this grade gasoline that is being sold is 81-octane and above, on which OPA states a price higher than 6.5c is permissible.

Motor gasoline being bought by U. S. Navy for Britain, under lease-lend agreements, ranges from 64 to 68-octane and prices being paid for this are above 6.5c, refiners point out, adding that most of the available gasoline of this grade is being sold outside this country.

Texts of Price Administrator Henderson's telegram to the 22 Gulf refiners and text of his telegram to 12 major oil companies informing them of this action follow:

Telegram to 22 refiners:

"In view quotations appearing in trade publications of 6.75c per gallon cargo price for motor gasoline 80-octane 39 research rating with 2ccs lead Gulf Coast, this office requests observance maximum price 6.5c for this material with maintenance usual differentials for other leaded and unleaded gasolines and asks your co-operation in preventing inflationary trend of Gulf Coast prices. May we have your acknowledgement and acceptance this request."

This wire was sent to Chalmette Petroleum Corp., New Orleans; Evangeline Refining Co., Jennings, La.; General Oil Corp., Meraux, La.; American Petroleum Co., Houston; Amsco Refining Co., Corpus Christi; Bareco Oil Co., Corpus Christi; Coastal Petroleum Corp., Mobile, Ala.; Crown Central Petroleum Corp., Baltimore; Eastern States Petroleum Co., Inc., New York City; Hamman Exploration Co., Houston; Houston Oil Co. of Texas, Houston; Hutex Oil & Refining Co., Hardin, Tex.; Maritime Oil Co., Houston; Phoenix Refining Co., Inc., Dallas; Pontiac Refining Corp., Corpus Christi; Refugio Refinery, San Antonio; Shelly Refining Co., Bay City, Tex.; Southport Petroleum Co., Houston; Southwestern Oil & Refining Co., Corpus Christi; Stone Oil Co., Houston; Taylor Refining Co., Taylor, Tex.; Terminal Refining Co., Corpus Christi.

Majors Notified

Following wire was sent by OPA to 12 majors informing them of the wire to 22 Independents:

"We are advising independent refiners to observe maximum cargo price of 6.5c for motor gasoline 80-octane 39 research rating with 2ccs lead Gulf Coast. We will continue to recognize such purchases as you may make from independent refiners at their maximum price in our study of Gulf and East Coast prices. Assume no changes in your refinery price has been or will be made without our express approval. Appreciate your co-operation and acceptance of this request. Please acknowledge."

This wire was sent to following: Continental, Pan American Petroleum Corp., Destrahan, La., Shell, Louisiana Standard, Atlantic Refining, Gulf, Humble, Magnolia, Pan American Petroleum & Transport Co., Pure, Republic, Sinclair, Texaco.

Slippery?

Four thousand seventy-six people died last year of gas. Twenty-nine inhaled it, 47 put a lighted match to it and - - four thousand stepped on it.

—*Iowa Petroleum Industries Committee Bulletin*

Marketers Can Buy New Oil Equipment With Revised P-22

NPN News Bureau

WASHINGTON, Nov. 10. — Wholesale oil marketers may now replace outmoded equipment with modern equipment under an amendment issued to Preference Rating Order P-22, states Office of Production Management, clarifying this point as follows:

"Amendment 'C' (of the order) makes two important changes. It deletes the provision of the previous order which refused assistance in replacement of equipment by improved equipment, and prohibited replacements 'unless such existing installation is beyond repair.'

"It has been found impossible, and in many cases undesirable to require replacement with equipment exactly like the old. The procedure frequently held the producers to the use of antiquated equipment, and sometimes made it impossible for him to obtain any replacement equipment at all."

Amendment A of this order extended assistance to the transportation and production of natural gas and hydrocarbon associated with petroleum. Says OPM: "This means that pipelines, railroads and truck fleets engaged in moving the products of the petroleum industry, may now apply the A-10 rating to the acquisition of necessary repair and maintenance parts and operating supplies."

WASHINGTON . . . Orders and Recommendations

Price Administrator Henderson freezes all prices of all petroleum and petroleum products at Oct. 1 levels; requests notification from all marketers, producers and purchasers of all price increases made since Oct. 1 and advance notice of contemplated future increases.

* * *

Acting Petroleum Co-ordinator Robert E. Allen requests district refining committees to study means of substituting 5,000,000 wooden barrels for an equal number of steel drums within the oil industry during next 12 months.

* * *

President Roosevelt appoints Interior Secretary and Petroleum Co-ordinator Ickes as Solid Fuels Co-ordinator for National Defense.

* * *

Office of Production Management broadens priorities assistance under preference rating order P-22 to include repair, maintenance and operating supplies for natural gas and hydrocarbons associated with petroleum. In press release, OPM interprets the amendment as also permitting priorities assistance to wholesale oil marketing in the purchase of modern equipment to replace outmoded equipment.

* * *

Office of Price Administration wires Gulf coast refiners; asks compliance with 6.5c "ceiling" on 80 oct. ('39 Research) gasoline. Next, OPA wires cargo buyers informing them of requests to Gulf Coast sellers.

* * *

Office of Production Management's power curtailment for southeastern U. S., set to become effective Nov. 10, is postponed 1 week with possibility of further postponement. However, "blackout" of advertising signs and ornamental and flood lights continues.

* * *

Supply Priorities and Allocations Board stamps "final disapproval" on proposed 1580-mile crude pipeline project from east Texas to New York-Philadelphia refining areas.

D.J.'s Attitude Toward Advertising Told by Arnold, Hits 'Line Forcing'

NPN News Bureau

WASHINGTON, Nov. 8.—Explaining the attitude of the Justice Department toward advertising, Assistant Attorney General Thurman Arnold told Washington's Advertising Club this week that "we never prosecute advertising but we do prosecute advertisers."

Speaking about advertising of national brand commodities and citing gasoline as an example, Mr. Arnold said anti-trust laws are violated when an advertiser employs "full line forcing," a term used for advertisers whose advertising practically forces a dealer to carry that brand and then the advertiser insists that the dealer carry the complete line of goods made by this advertiser—and his line only. This, Anti-trust Chief Arnold said, tends to eliminate competition.

Clarifying view of the Justice Department on prices, Mr. Arnold said that if a group of small business men formed a combine, so to speak, and agreed to sell at certain prices in order to combat a large competitor that this might or might not be in violation of the anti-trust laws.

Twin Ports Case Ends

WASHINGTON, Nov. 10—Efforts of Twin Ports Oil Co., jobbing concern of Duluth, Minn., to collect damages it claimed from Pure Oil Co., ended today.

U. S. Supreme Court refused to review a Twin Ports petition to reconsider previous decision in which it denied a review of the Eighth U. S. Circuit Court of Appeals decision. The circuit court had upheld verdict of lower district court which brought a directed verdict against Twin Ports in 1940.

One fill lasts all winter...

Once Shellzone Permanent Type Anti-Freeze goes into a radiator, there's nothing else to do all Winter through! You're completely protected against the coldest weather!

And the specially designed Crown Cans in which Shellzone Permanent Type Anti-Freeze is shipped insure complete protection against leakage until this popular product is ready for use.

Crown Cans are also Shell's choice for packaging their other types of anti-freeze solution . . . a further demonstration of the fact that Crown's dependability as a source of supply for metal containers is winning more and more patronage from the Nation's leading marketers.

1941 will be Crown's biggest year so far by a wide margin. Let Crown help solve *your* packaging problem . . . whether it involves a single product or your entire line.

CROWN CAN COMPANY, PHILADELPHIA, PA. *Division of Crown Cork and Seal Company.* Baltimore • St. Louis • Houston • Madison • Orlando • Fort Wayne • Nebraska City.

INDEPENDENT AND HELPFUL CROWN CAN

U. S. Navy Bid Invitations

WASHINGTON, Nov. 8.—U. S. Navy Department bid invitations announced today are:

Schedule LL-900-6759, opening Nov. 10, delivery f.o.b. Gulf ports or Aruba during November and December, 320,000 bbls. blending naphtha, 360,000 bbls. burning oil, 296,000 bbls. diesel oil, 304,000 bbls. gas oil, 80,000 bbls. signal oil, and 263,000 bbls. vaporizing oil.

Schedule LL-900-6761, opening Nov. 20, delivery f.o.b. Gulf ports or Aruba before Nov. 20, 228,000 bbls. refinery gas oil.

Schedule LL-9446, opening Nov. 18, delivery from November to March, 3,058,000 bbls. 100-octane aviation gasoline, unleaded base, at East or Gulf Coast ports or Aruba.

Schedule LL-9432, opening Nov. 18, delivery f.a.s. New York or Philadelphia, during November, 18,000 gal. lubricating oil for aviation use and 12,000 gal. Caterpillar engine oil.

Schedule LL-9431, opening Nov. 14, delivery f.a.s. New York or Philadelphia during December, for lubricating oil in lots of 236,000 gal., 19,446 gal., and 18,754 gal.

All bids are being bought with U. S. Lease-Lend funds and must comply with revised British Petroleum Mission specifications.

Use New 'Specs'

WASHINGTON, Nov. 7—British Petroleum Mission's newly revised specifications will be basis for U. S. Navy Department's lease-lend bid invitations opening Nov. 10, 14, 18 and 20, a B.P.M. spokesman told NPN today.

But while lease-lend bids which open on above dates will be based on the newly revised specifications, further changes in these specifications will be made, NPN was told. However, it was said these additional revisions would not be significant.

More Bids Announced

WASHINGTON, Nov. 10.—U. S. Navy Department bid invitations announced today call for 1020 long tons of lubricating oil. This is Schedule LL-9457, opening Nov. 14, and is for lots of 720 long tons of ordinary mineral lubricating oil and 300 long tons of "special" mineral lubricating oil, delivered in drums, f.a.s. New York or Philadelphia during December and January.

Schedule LL-9447, opening Nov. 18, is for 7,120,000 bbls. of motor gasoline; 1,115,400 bbls. of vaporizing oil; 2,240,000 bbls. of burning oil; 2,508,000 bbls. of gas oil; 1,332,000 bbls. of diesel oil; 442,000 bbls. of fuel oil and 356,000 bbls. of marine diesel oil. Delivery is to be f.o.b. Gulf ports or Aruba from December through February.

Schedule LL-9467 opens Nov. 25, and is for 21 lots of lubricating oil totaling 899,940 bbls. and delivery is to be f.a.s. U. S. East or Gulf coast during January, February and March, 1942.

All of the above is being purchased with U. S. lease-lend funds for shipment abroad and must conform to the newly revised British Petroleum Mission specifications.

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Name.....

Position.....

Company.....

Address.....

City..... State.....

3 Companies List 9-Month Earnings

Panhandle

NPN News Bureau

CLEVELAND, Nov. 8.—Panhandle Producing & Refining Co. and subsidiaries reported this week a net profit of $200,811.13 for the first 9 months of 1941, compared with a net loss of $38,490.03 for the same 1940 period.

* * *

Tide Water

NPN News Bureau

CLEVELAND, Nov. 8.—Tide Water Associated Oil Co. this week reported a net income applicable to common stock of $8,103,095 for the first 9 months of 1941 comparing with $5,370,125 during the corresponding period of last year.

* * *

Ohio Oil

NPN News Bureau

CLEVELAND, Nov. 8.—Net income for first 9 months of 1941, before provision for federal income taxes, was reported by Ohio Oil Co. at $9,755,294.97. After deduction of $1,949,728.39 for normal federal income tax and $1,279.06 for minority interests, the net income was $7,805,566.58. Common stock earned $1.02.

James K. Vaughan Dies

James K. Vaughan, 47, assistant comptroller of Humble, died Nov. 6 in a Houston hospital after an extended illness. A lifelong resident of Houston, Mr. Vaughan had been with Humble since 1919.

WITH THE ASSOCIATIONS

AAA Membership To Seek Priority For Repair Parts

NPN News Bureau

WASHINGTON, Nov. 11. — American Automobile Assn. opens a four day convention in White Sulphur Springs, W. Va., tomorrow, A.A.A. said today.

A five-point program to protect motor car owners during the emergency is scheduled to be presented before the 39th annual convention on Nov. 13 by the A.A.A.'s committee on consumer relations.

The program:

"1—Work against the misconception on the part of many—including Government officials—that the passenger car is merely a 'pleasure vehicle' and can be taxed and restricted as a luxury.

"2—Seek maintenance of a high priority rating for passenger car replacement parts.

"3—Bring about establishment of adequate training courses that will assure a plentiful supply of automobile mechanics.

"4—Keep a continual watch on prices of things motorists buy and prevent large-scale, uncalled-for increases.

"5—Insist that when curtailments of materials or facilities are ordered, the burden be spread equitably over all consumers of such commodities and not confined to passenger car users alone."

In a pre-convention statement, A.A.A. President Thomas P. Henry said that, regardless of curtailment that may be necessary in new car production, it is vital to maintain present stock of 27,000,000 passenger cars operating.

Nebraska Refinery Bought By Co-operative Group

NPN News Bureau

TULSA, Nov. 10.—Purchase of the 1500-bbl. refinery at Scottsbluff, Neb., by Co-operative Refinery Assn., will enable the co-operative group to produce between 60 and 70% of the total refined oil needs of its membership, according to announcement by Howard A. Cowden, association president.

The $750,000 purchase of the Terry Carpenter, Inc., properties, includes the skimming-cracking plant, administrative buildings and warehouse at Scottsbluff, 9 Nebraska retail outlets and a fleet of a dozen truck transports. Products from the Nebraska plant will be marketed to co-ops in southeastern Wyoming, Northwestern Colorado and parts of western Nebraska.

C. R. A., affiliate of Consumers Co-operative, Inc., already plans construction of additional storage at the plant's tank farm.

While crude for the co-operative refinery will be obtained from the Lance Creek, Wyo., field via existing crude lines, the purchase does not include the Terry Carpenter properties in Colorado and Wyoming.

Final transfer of properties to the co-op will be made about Dec. 2.

Schroeder Heads A.P.I.C. Group in Wisconsin

MADISON, Wis., Nov. 8. — Walter E. Schroeder, Milwaukee, of the Deep Rock Oil Corp., has been elected chairman of the Wisconsin Petroleum Industries Committee and Fred M. Elliott has been re-elected secretary for 1941-42, Mr. Elliott announced this week.

125 Distillate Fields Unexploited, Kaye Tells Tulsa Geological Group

NPN News Bureau

TULSA, Nov. 8.—Only 23 known "distillate" or condensate reserves in the Southwest have been exploited, leaving approximately 125 undeveloped fields, Emby Kaye of Tulsa, Distillate Engineering & Process Co., told members of the Tulsa Geological Society last week.

Not many years ago, the discovery of a distillate field meant a great disappointment for oil company executives. But with the development of recycling, a distillate field today is apt to bring smiles to their faces, since such a field is apt to be worth more than an oil field, it was explained.

At present there are approximately 40 recycling projects in operation, he told the geologists, processing two billion cu. ft. of gas daily and producing about 60,000 bbls. of condensate daily. Most of this condensate is converted into motor fuel and kerosine either at the recycling plant by fractionation or at some nearby refinery.

The value of condensate in national defense takes on added significance now that the country's output of 100-octane aviation fuel must be trebled, Mr. Kaye said. Iso-butane, one of the products of recycling, is a vital part of the raw feed gas necessary in production of 100-octane gasoline. One part of iso-butane and one part of butylene or refinery gas equals two parts of aviation motor fuel, the audience was told.

While condensate is 100% refinable, the total output of this product today represents only about 3% of the country's crude oil production, the Tulsan said in justifying belief that distillate production should not be pro-rated.

Speaking on the economics of recycling, Mr. Kaye stated that out of 40 recycling projects now in operation only 1 has proven uneconomical. There are indications, however, that this plant may soon justify its existence, he said.

Heads West Virginia Petroleum Group

John W. Wright, Charleston, sales manager for the Elk Refining Co. and new president of the West Virginia Petroleum Assn., is congratulated by Past President J. E. Jones (right), Parkersburg, of The Pure Oil Co., at the association's 4th annual convention at Parkersburg, Oct. 15. I. F. Pierce, Roanoke, Va., of American Oil Co., was named vice-president

W. P. R. A. Schedules Refining Question-Answer Session

NPN News Bureau

TULSA, Nov. 10.—Another of Western Petroleum Refiners Assn.'s popular question and answer sessions on refinery problems has been scheduled for Shreveport, Nov. 14.

Questions submitted by both refinery chemists, superintendents and engineers indicate trend of though among refinery men, the announcement says, continuing:

"That he is not unmindful of the war and the national defense program, the revolutionary effects these have had and will continue to have on refining, is clearly indicated by a number of the questions. These refiners want to talk about the trend of octane numbers for gasoline, which have long moved upward but now threaten to go in reverse and move downward in the light of defense developments and likely shortage of lead and vital chemicals. Shortage of chemicals for treating will also have a place in the discussion, as will aviation gasoline manufacture and demand, product specifications and the possible effect of shortage of steel and equipment on future plant operations."

Stephens Directs Carrier Research

NPN News Bureau

WASHINGTON, Nov. 10—Arthur M. Stephens, former traffic manager and member of board of directors of Kentucky Standard, has been appointed by the Board of Investigation and Research to direct research into the economy and fitness of carriers by rail, motor, and water. The Board was created by Transportation Act of 1940.

While with Kentucky Standard, Mr. Stephens made his headquarters in Louisville. He started out in 1908 with the Louisville and Nashville Railroad, serving in various executive capacities until 1917 when he was appointed assistant chief of the Tariff Bureau of the Southern Railway in Atlanta.

Joined KYSO in 1918

Mr. Stephens entered the industrial transportation field when he joined the staff of Kentucky Standard in 1918, becoming traffic manager in 1922.

His 25 years experience includes 2 years as instructor of traffic management in Louisville Institute of Technology and service in an advisory capacity on transportation and legislative committees of American Petroleum Institute, National Industrial Traffic League, and National Assn. of Shippers' Advisory Boards.

Pipeline Rates on Crude Reduced by Humble

NPN News Bureau

HOUSTON, Nov. 10—Flat reductions of 2.5c per bbl. in tariff rates affecting most shipments of crude by trunk pipeline from Texas and New Mexico origins to Texas Gulf Coastal refining centers and from Texas fields to Baton Rouge, La., are being posted by Humble Pipe Line Co. effective Dec. 1. Gathering charges remain unchanged.

Representative new and old trunk line rates, exclusive of gathering charges, are shown below in cents per barrel:

East Texas to:	Old	New
Baton Rouge	12.5c	10c
Baytown, Tex. area	12.5c	10c
Texas City, Tex. area	12.5c	10c
West Texas, New Mexico to:		
Baytown, Tex. area	22.5c	20c
Corpus Christi, Tex. area	22.5c	20c
Texas City, Tex. area	22.5c	20c
Texas Panhandle to:		
Baytown, Tex. area	25c	22.5c
Texas City, Tex. area	25c	22.5c

ICC Delays Effective Date On Minimum Oil Rates

NPN News Bureau

WASHINGTON, Nov. 11.—Interstate Commerce Commission today postponed until Jan. 31, 1942, the effective date of its order prescribing minimum rates for rail and motor shipment of petroleum products for a distance of 170 miles or less between points in Kansas, Arkansas, Oklahoma, and Missouri.

On June 30, 1941, ICC issued an order, finding that rates for the shipments involved were too low, and set prescribed minimum rates. Rates were due to go into effect Dec. 1, 1941.

U. S. Places Supervision Of Tankers Under Jersey

NPN News Bureau

NEW YORK, Nov. 8—New Jersey Standard disclosed last week that its marine department has been placed in charge of supervising construction of 87 tankers for the U. S. Maritime Commission at the Chester, Pa., yards of the Sun Shipbuilding and Drydock Co. This work is being handled by the company's marine department in addition to its supervision of five tankers now building to fly the "Esso" flag and eight for the Panama Transport Co., a Jersey Standard affiliate.

The Maritime Commission tankers, to be completed by December, 1943, will be fitted with paravane installations to guard against mines and will have ammunition chambers and gun foundations. Jersey Standard's marine department will check all plans, specifications, materials and workmanship and company inspectors will be on the job during tests and trial runs.

Globe Oil Completes Mid-West Pipeline

NPN News Bureau

TULSA, Nov. 10.—Globe Oil & Refining Co.'s new McPherson, Kans., to Council Bluff, Ia., pipeline has been completed and initial truck deliveries out of the northern terminus are scheduled next week.

The petroleum products line is now operating at a daily capacity of approximately 6600 bbls. Installation of 3 pump stations along the line will increase capacity to 10,000 to 12,000 bbls. daily.

Completion of work on the Council Bluffs loading rack has been held up pending delivery of certain equipment, but the rack will be sufficiently complete by next week to permit operations.

Propose Fuel Oil Rail Cut From Nebraska to Mid-West

NPN News Bureau

TULSA, Nov. 10.—In a further effort to widen the area into which their heavy fuel oils may be marketed, Nebraska refiners have had a proposal docketed by Western Trunk Line Committee calling for reductions of from 0.370 to 0.740c per gal. on residual fuel oil shipped from Salem and Falls City to several Indiana and Ohio destinations.

U. S. Lets Contracts For Concrete Barges

NPN News Bureau

WASHINGTON, Nov. 10.—Maritime Commission's long-pending plans for construction of concrete barges were climaxed today by the award of 3 contracts totaling approximately $9,000,000 for 15 barges.

Amount of the contracts included construction of building facilities. Barges were designed to carry bulk cargoes of all types, not just oil.

Each of 3 companies will build 5 barges:

Port Newark Shipbpilding Corp., Newark, N. J.; San Jacinto Shipbuilders, Inc., Houston, Tex.; and Allied Engineering and Shipbuilding Corp., and Tavares Construction Co., joint ventures, of Los Angeles. Delivery is scheduled for 1942.

With a length of approximately 350 ft. and a beam of 54 ft., the barges are equipped for operation by crews although they will not be self propelled.

NPN's Washington Directory Of Oil Agency Headquarters

Following is a partial list and directory of governmental agencies in Washington dealing with matters affecting the oil industry: (List is as accurate as possible but is only tentative, as changes are constantly occurring in room and phone numbers)

Petroleum Co-ordinator—Harold L. Ickes
Interior Department (New Building), 18th and C Streets, N. W., Room 6156, Extension 500

Deputy Petroleum Co-ordinator—Ralph K. Davies
New Interior Building, Room 6654, Extension 3831-2

Interior Department Phone Number—Republic 1820

Petroleum Co-ordinator's Staff
6th and 7th Floors, New Interior Building

Special Assistant—
George W. Holland, Room 7312, Extension 643

Director of Production—
Robert E. Allen, Room 6647, Extension 3334

Director of Refining—
Wright W. Gary, Room 6637, Extension 3233

Director of Transportation—
H. A. Gilbert, Room 6629, Extension 4418

Director of Marketing—
John W. Frey, Room 6623, Extension 4646

Director of Research—
Edward B. Swanson, Room 7313, Extension 649

Director of Conservation—
Everett Lee De Golyer, Room 6618, Extension 4459

Chief Counsel—
J. Howard Marshall, Room 6649, Extension 4100

OPM Priority Consultant—
James E. Hughes, Room 7416, Extension 4616

Executive Officer—
Stanley W. Crosthwait, Room 6515, Extension 4363

Special Assistant (Liaison)—
William S. Arnold, Room 6626, Extension 4446

Director of Information—
Herbert A. Yocom, Room 6620, Extension 3844

On Special Assignment to Information Division—
Walton Onslow, Room 6622, Extension 3844

Foreign Division—
W. D. Crampton, Room 7525, Extension 4788

Petroleum Receptionist—
Mrs. Rosalie E. Reid, Room 6635, Extension 3429

Oil Section, Office of Production Management—
New Social Security Building, Room 4062. **Dr. Walter Whitman,** petroleum consultant for OPM, Phone Number Republic 7500, Extension 2564; Staff: **C. C. Monrad**

Office of Price Administration—
4th and Independence Avenue, Temporary Building D, Republic 5050. **Dr. J. K. Galbraith,** assistant administrator in charge of price division, Extension 673; **George Doffing,** price executive of fuel section, Extension 684

U. S. Maritime Commission—
M. W. Bowen, tankers, Commerce Department, Room 4319 Capitol's Phone Number—NAtional 3120

Congressional Oil Investigating Committee—
Rep. Wm. P. Cole, Jr., Chairman, New House Office Building, Room 1535, Extension 699

Senatorial Oil Shortage Investigating Committee—
Senator Francis Maloney, chairman, Senate Office Building, Room 354, NAtional 3120, Extension 1196

OIL TRANSPORTATION

'Sea Otter' Ships May Transport Oil To Atlantic Coast

NPN News Bureau

WASHINGTON, Nov. 8 — President Roosevelt's revolutionary "sea otters"—ships designed by the Navy to meet the submarine menace and overcome the setbacks of mounting shipping losses in the Battle of the Atlantic—may carry oil to the East Coast.

In turning down the proposed 1,580-mile crude pipeline from Texas to the refining area of New York and Philadelphia, Supply Priorities and Allocations Board suggested that Petroleum Co-ordinator Ickes look into the possibility of using "sea otters" (see cut) as an alternative means of transportation.

The Navy's enthusiasm over the ship, designed with the active and insistent help of Mr. Roosevelt, was clearly displayed in its official announcements regarding the craft. The Navy said the vessel was of "revolutionary" design, conceived by "daring minds," and would "challenge the submarine and provide new bridge from this country to the free nations of the world."

Engineers believe the ship (small: 270 feet long; 1900 tons displacement) can be produced by hundreds along the Mississippi and other inland waterways where construction will not impede the nation's gigantic shipbuilding program. They believe further that standardization of plans will make possible the construction of a "sea otter" in two months.

The revolution in design is in the application of power. Sixteen gasoline engines drive the vertical shaft of a 6-ft. propeller which is sunk into the water amidships—not on the stern—somewhat on the order of an outboard motor. Engines are of 110 h.p., 6 cylinders each, developing a total of 1700 brake h.p.

Makes Twofold Offer

WASHINGTON — "I'm a crack shot with a rifle, good enough without a hand rest to hit a bumblebee on the wing", wrote a 75-year-old north Georgia mountaineer in a double-barreled reply to the War Department's truck and bus survey in which he offered Uncle Sam the use of both his truck and his marksmanship.

Model of the "sea otter" which Supply Priorities and Allocations Board has asked Petroleum Co-ordinator Ickes to investigate for use in hauling oil to the East Coast. The Navy has not made clear how oil would be carried in these vessels; whether in specially-constructed bulk compartments or in packages

SPAB Gives Final Rejection To 1580-Mile Crude Pipeline

NPN News Bureau

WASHINGTON, Nov. 8 — Petroleum Co-ordinator Ickes' proposed 1580-mile crude pipe line from East Texas to New York-Philadelphia area was dealt a death-blow this week by Supply Priorities and Allocations Board, with the telling die cast by Price Administrator Henderson.

Ruling that priorities would not be issued for the line, because its worth as a defense project is not commensurate with the high ratings necessary, SPAB said flatly that its action "constitutes a final disapproval of the pipeline project."

As an alternative, SPAB suggested shorter pipelines and recommended that Mr. Ickes explore the possibilities of other means of transportation—citing tank cars, concrete oil barges, and ships of the "sea otter" type. Mr. Henderson said in a final report to the over-all defense group that potential shortages could "be handled practicably" by curbing civilian consumption of gasoline, and by improving use of tank cars, barges, tank trucks, pipelines.

Henderson Vote Decisive

On Sept. 16, SPAB ruled against priorities for the steel plate which was included in original plans. Faced with this rejection, Deputy Petroleum Co-ordinator Davies submitted a revised application, asking for priorities on seamless steel tubing. It was this revised application that SPAB turned down Nov. 5.

A preliminary vote on the revised application was taken Oct. 29, with final action deferred at the request of Mr. Henderson who asked that his staff be allowed to complete studies of various phases of the project. When these studies were completed, Mr. Henderson joined with other members of the board in voting against the project.

"Since defense needs are so great," SPAB ruled, "large quantities of critical materials must not be devoted to any project, even if the project is wholly desirable in itself, that is not essential either to the defense program or to the public health and safety."

Taking cognizance of the importance of assuring the heavily industrialized East of an adequate oil supply, SPAB suggested, as other possible alternatives, the construction of other, less expensive and shorter pipelines, linking sources of supply with markets in such a manner that the Eastern supply would be eased; re-conversion to coal of certain industrial plants; and restrictions on the use of gasoline for pleasure driving.

'Pipeline Door' Still Open

"Today's action," SPAB emphasized, "is not to be taken as rejection of the idea of building any pipelines at all, but is applied solely to this particular project."

Tube to build the line would be available, through high priority ratings, and the entire quantity that would be consumed in the line's 1580 miles could be produced between Nov. 15 of this year and next Sept. 1.

But—and SPAB emphasized this point—it would not be possible to get the necessary valves, pumps, motors and tanks built in time for installation as needed without interfering with important defense production.

Tanker Diversion Seen

Mr. Henderson's position was outlined in a letter to SPAB. Because no one can accurately foretell what the future will bring, he said, his staff analyzed various probable alternatives, basing final judgment on 4 major considerations:

1. Provided no more tankers are diverted to British or Russian use, existing transportation facilities would be more than adequate to meet expected increases in 1942 demand.

2. But it is "hardly realis-

tic" to ignore "probable future diversions" of tankers; therefore, his staff examined the possible effects of tanker diversions in numbers varying up to 100.

"In view of attainable improvements in the use of tank cars, barges, tank trucks, and pipelines, and feasible economies in the use of petroleum products," Mr. Henderson brought out, "it was concluded that potential shortages could be handled practicably by curtailment of civilian use of gasoline in passenger automobiles without impinging on the normal consumption of residual and distillate fuels and of essential industrial and commercial uses of gasoline."

Would Ration Gasoline

3. "I do not embrace lightly the probability of civilian rationing of gasoline. But to avoid this eventuality would require a diversion of more than 660,000 tons of steel ingots into this pipeline. This amount of steel exceeds the annual consumption of many civilian industries . . . I am forced to conclude that the future advantages of the pipeline would not justify the immediate displacement of labor and facilities over a wide segment of the economy which its construction would entail.

4. "Finally, I must agree with the other members of the Board that the potential contribution of this project to defense is not great enough to justify the high priorities which would be needed to assure completion of the line and its auxiliary equipment. In the face of a greatly expanded and accelerated defense program, we cannot afford to commit substantial quantities of materials and facilities to purposes, no matter how desirable, which are not vital to that program or to the maintenance of essential civilian services."

Crude Oil Starts 236-mile Journey Through Portland-Montreal Pipeline

Special to NPN

PORTLAND, Me., Nov. 10.—Crude oil was sent flowing through the nation's first "defense" pipeline today when Maine's Gov. Sumner Sewall and Colonial Beacon's President A. Clarke Bedford opened a valve at the South Portland pumping station of the 236-mile Esso pipeline running between Portland, Me., and Montreal.

The new pipeline, a national defense project costing $8,500,000, was rushed to completion in the record time of 142 days. Ground was broken on June 21, 1941. Since that time, 32,700 tons of 12¾-in. pipe have been laid and welded electrically to form a continuous tube between the line's 8 pumping stations.

Tankers carrying crude for Montreal refineries will be saved 12 days on the round trip between South American or Gulf ports and Canada through operation of the line since they will be able to discharge cargoes at South Portland and eliminate the long trip through the Gulf of St. Lawrence and down the St. Lawrence River to Montreal.

At the outset, only 4 of the line's pumping stations will be operated as a result of difficulties encountered in obtaining necessary materials and pumping equipment, but the 4 additional stations are expected to be in operation shortly after the first of the year. With 4 stations pumping, the new line will handle about 25,000 bbls. daily, as against a 60,000-bbl. maximum daily capacity when all stations are in operation, officials said.

Overland Crude Shipments to East Up 138% During 'Shortage'

NPN News Bureau

WASHINGTON, Nov. 8 — Overland crude shipments into District 1 have commenced to drop since Petroleum Co-ordinator Ickes' announcement that the British were returning 40 U. S. tankers, his office reported this week.

However, while East Coast oil "shortage" was in force, overland crude shipments showed a 138% gain between May and September, PCO said. May shipments were 1,220,000 bbls.; September's 2,917,000 bbls.

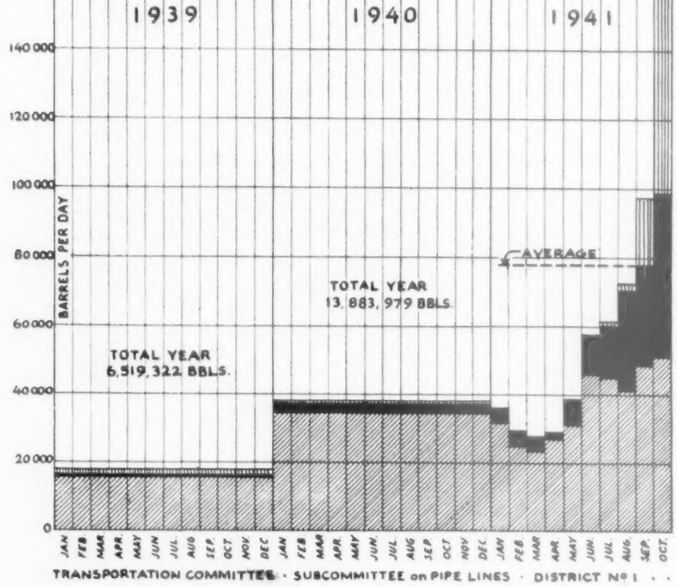
PCO estimates that October shipments, had it not been for revocation of the "shortage", and if tank car shipments had continued to increase, would have been in excess of 4,800,000 bbls.

Crude shipment figures were prepared by District 1's Transportation Committee, headed by W. Alton Jones, president of Cities Service. The survey did not include shipments of refined products.

Figures Given

Increases in overland crude shipments from end of May to end of September follow:

	Barrels—Monthly May	Sept.
Pipeline	952,145	1,434,297
Combination: pipe-line-tank car	.....	551,219
Combination: pipe-line-barge	259,980	261,500
Tank car	10,038	560,054
Tank truck	191	312
Combination: pipe-line-truck	.....	43,626
Combination: tank car-barge	.....	46,284
Total	1,222,354	2,917,292


INCREASE OF CRUDE OIL MOVEMENTS BY THE INDUSTRY INTO DISTRICT NO.1
VIA PIPE LINE, TANK CAR, BARGE AND TANK TRUCK OR COMBINATION THEREOF
VIA PIPE LINE EXCLUSIVELY
COMBINATION VIA PIPE LINE & TANK CAR, BARGE OR TANK TRUCK
COMBINATION VIA TANK CAR, TANK TRUCK & BARGE
ESTIMATED
1939
1940
1941
AVERAGE
TOTAL YEAR 13,883,979 BBLS.
TOTAL YEAR 6,519,322 BBLS.
BARRELS PER DAY
160 000
140 000
120 000
100 000
80 000
60 000
40 000
20 000
0
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC JAN FEB MAR APR MAY JUN JUL AUG SEP. OCT.
TRANSPORTATION COMMITTEE · SUBCOMMITTEE on PIPE LINES · DISTRICT No 1

Graph prepared by District 1's Transportation Committee to show overland movement of crude into the East Coast area

Tank Car Shipments To District 1 Rise

NPN News Bureau

WASHINGTON, Nov. 6. — Tank car movement of crude and its products into District 1 increased 1350 bbls. for week ending Nov. 1, compared with previous week, Petroleum Co-ordinator's Office reported today.

Average daily movement was 584 tank cars compared with 578 in the previous week, PCO said.

Company shipments in number of tank cars for week ending Nov. 1, were: Atlantic Refining—422; Cities Service—161; Gulf—247; Pan-American—469; Pure—66; Shell—294; Sinclair—548; Socony-Vacuum — 158; Kentucky Standard—92; Jersey Standard—1192; Sun—7; Texaco—192; Tide Water—238.

Socony's Cleveland Division Gets Lube Oil by Barge

NPN News Bureau

CLEVELAND, Nov. 8. — Cleveland Division of Socony-Vacuum received its first shipment of lubricating oil by barge this week, according to C. M. Dawson, operating manager.

The barge left New York and arrived in Cleveland via Albany, Erie Canal, Lake Ontario, Welland Canal and Lake Erie, docking on the Cuyahoga River about three-quarters of a mile from Socony's bulk terminal where capacity for lubricating oil storage totals 2,500,000 gal.

Tanker Construction Hits New U. S. Peak

NPN News Bureau

NEW YORK, Nov. 8 — One hundred ninety-seven tankers totaling 2,053,800 gross tons were under construction or on order at American shipyards as of Nov. 1, American Bureau of Shipping reported this week. This is largest number of tankers ever to be building in the U. S. at any one time.

During October, the U. S. Maritime Commission awarded contracts for a total of 49 tankers: 36 of 10,750 gross tons each and 13 of 9800 gross tons each. Two tankers were completed during the same month: the "Caddo", a 9890 gross ton vessel for Socony-Vacuum, and the "Sinclair Rubilene," of 7874 gross tons, for Sinclair.

Launched during October were the "Aekay" for Keystone Tank Ship Corp.; the "Charles S. Jones" for Richfield Oil Corp.; and the "Patrick J. Hurley" for Sinclair.

Oil's Expansion for Defense Urged As Industry Leaders Meet at A.P.I.

(*Continued from page* 11)

it of our crude oil production capacity, "we all know there is a limit." He related how he was recently asked if the industry could produce 5,000,000 bbls. daily without injury to its properties and, if so, for how long?

With defense requirements mounting and new discoveries fewer, the safety margin is fast narrowing, according to Mr. Davies, who added that "the moment our requirements exceed efficient rates of flow from our flush fields, we may lose as much as 20% of the currently calculated 20,000,000-bbl. total reserve."

Since 1938, reserves have been increased only by increased estimates for fields discovered in prior years, which has maintained "our paper position" with regard to reserves, he said.

'Refining Nears Limit'

Refining capacity, according to Mr. Davies, is virtually at full capacity in most sections. Any "margin" left is for the most part a "statistical abstraction" or is unsuited to make the kind of products needed most now, he said.

Doubling or trebling our 100-octane capacity will be required; likewise, there is need for more refining capacity for high-viscosity lubricating oils, he added. Because of demands for lead from other defense industries, "we find now the need for curtailing the use of tetraethyl lead."

'Lead' Curtailment Seen

Mr. Davies did not explain the method of "lead" curtailment. However, Dr. John W. Frey, PCO's marketing director, in a group marketing session Nov. 6, expressed the opinion that it would be done, as follows:

Uniform specifications—with a lower octane rating than at present—will probably be set for "'regular" gasoline and refiners whose unleaded product does not meet this specification will probably be allotted enough "lead" to meet this specification, if needed.

This statement was made by Dr. Frey in reply to a question. In his prepared address, he said:

"It is impossible to predict all of the complications in marketing motor fuel that will result from the reduction in the availability of 'lead' to the oil industry. As the Army will, no doubt, request that premium motor fuel be distributed widely for its own purposes, there must be sales, but the quantity of Ethyl gasoline will have to be held within certain limits. That means there must be some mechanism for preventing the development of any unusual demand for Ethyl.

"The octane race is over until the end of the war, but there remains the problem of securing specifications that will give all marketers a fair share of the market. The marketer may be blamed for selling motor fuel that pings and for the fact that the automobiles will consume more lower-octane fuel. Yet he, as the contact man with the consumer, will have to do the explaining."

On the matter of lube oils, Dr. Frey said:

"Aviation, too, is developing problems for the marketers of lubricating oils, especially those made from Pennsylvania bright stocks and neutrals. With a tremendous increase in the number of airplanes, Pennsylvania lubricating oil marketers may find it difficult to maintain all of their automobile trade.

"I would not be surprised to

A.P.I. Meet Draws 3074; Chicago Picked for '42

Special to NPN

SAN FRANCISCO, Nov. 8—Final registration figure for the 22nd annual meeting of American Petroleum Institute here was 3074, according to tabulation by J. A. McNally, New York, of the A.P.I. staff, who had charge of the registration desks.

Chicago was selected for the 1942 annual meeting, at the Stevens Hotel, Nov. 9-13. Mid-year meeting in the spring will be held at Oklahoma City, with date to be set later.

A.P.I. Re-Elects Officers; Two Offices are Abolished

Special to NPN

SAN FRANCISCO, Nov. 8—Re-electing William R. Boyd, Jr., as president for 1942 term, (*see page* 10), the American Petroleum Institute's directors abolished the office of executive vice-president which Mr. Boyd had held from 1929 until a few weeks ago when he was elected to fill the unexpired term of the late Axtell J. Byles as president.

The board also abolished the office of assistant secretary of the Institute which had been held for years by J. S. "Doc" Cook who acted as assistant to Mr. Boyd. Mr. Cook continues as Mr. Boyd's assistant with the latter elevated to presidency.

All other officers were re-elected, as follows: George A. Hill, Jr., Houston, Tex., of Houston Oil Co., vice-president for production; J. Howard Pew, Philadelphia, of Sun Oil Co., vice-president for refining; Eric V. Weber, Cincinnati, of Eureka Oil Co., vice-president for marketing; O. D. Donnell, Findlay, O., of the Ohio Oil Co., treasurer; and Lacey Walker, New York, of the A. P. I., secretary and assistant treasurer.

From its membership, the A. P. I. directorate re-elected the executive committee, as follows: W. R. Boyd, Jr.; John A. Brown, New York, of Socony Vacuum; Robert H. Colley, Philadelphia, of Atlantic; H. D. Collier, San Francisco, of California Standard; Henry M. Dawes, Chicago, of Pure; O. D. Donnell, of Ohio Oil; W. S. Farish, New York, of Jersey Standard; Jake L. Hamon, Dallas, of Cox & Hamon; George A. Hill, Jr., of Houston Oil Co.; Wm. F. Humphrey, San Francisco, Tidewater Associated; J. C. Hunter, Abilene, Tex., of Mid-Continent Oil & Gas Assn.; W. A. Jones, New York, of Cities Service; F. A. Leovy, Pittsburgh, of Gulf; B. L. Majewski, Chicago, of Deep Rock; J. Howard Pew, of Sun; Frank Phillips, Bartlesville, Okla., of Phillips; Charles F. Roeser, Fort Worth, Roeser & Pendleton; W. S. S. Rodgers, New York, The Texas Co.; E. G. Seubert, Chicago, of Indiana Standard; H. F. Sinclair, New York, of Consolidated Oil Corp.; W. G. Skelly, Tulsa, of Skelly; Reese H. Taylor, Los Angeles, of Union; R. G. A. van der Woude, New York, of Shell Union; and E. V. Weber, Cincinnati, of Eureka Oil Co.

George A. Hill, Jr., Vice-President (Production)

J. Howard Pew, Vice-President (Refining)

E. V. Weber, Vice-President (Marketing)

O. D. Donnell, Treasurer

Lacey Walker, Secretary and Assistant Treasurer

see considerable changes in lubricating oil specifications, at least for the duration of the emergency. Before we get much further along it probably will be found that lubricating oils will have to last longer than they did a year ago. Serious reconsideration of the 1000-mile lubricating program may be desirable."

Questioned later, Dr. Frey said that he was referring to "consumer specifications" in talking of changed specifications for lubes.

Asked About Credit Cards

PCO has no policy now regarding proposals to eliminate credit cards, according to Dr. Frey. During this discussion, a Canadian oil company officer said that credit cards were eliminated by government order to help the oil companies by reducing their expenses in face of mounting operating costs. Companies' expenses and losses with credit cards were running about 0.5c per gallon of gasoline sold, he added.

Justice department will be asked to give a "green light" to meetings of oil companies in their working out of ways to observe PCO's Recommendation No. 14 about discontinuing use of metal containers, said Dr. Frey. This was after an oil man had pointed out that containers were tied up with price policies with some companies.

Davies on Priorities

On marketing priorities, Mr. Davies said that OPM's forthcoming order curbing non-defense construction "will undoubtedly apply to service stations and other marketing facilities."

"From this time on," said the deputy co-ordinator, "it is unlikely that any (oil company's) marketing department can safely count upon further physical expansion except as the most unusual circumstances may justify. Critical materials are more urgently needed not alone in other branches of this industry, but in many other industries also vital to national defense."

Mr. Davies didn't go into the question of equipment and materials for maintenance of the industry's marketing machinery at top efficiency. Asked about this point by NPN later, Mr. Davies made it clear that he favored priorities assistance for such needed equipment and materials.

Discussing marketing priorities at the "quiz bee" following his prepared address Nov. 6, Dr. Frey said the deciding factor in question of expanding marketing facilities is whether or not such expansion is connected with national defense. He expressed the opinion that OPM would be likely to recognize the reasonableness of priorities for new bulk plants and service stations which had a tie-in to national defense.

Urges Expansion

Deputy Co-ordinator Davies

The PCO marketing director went all-out in stressing the importance of oil marketing, both to defense and civilian life, in his prepared speech.

Urges Transport Planning

Planning now for substitute transportation facilities in case there is another shortage of transportation due to diversion of tankers to British again, was urged by Mr. Davies.

"Ill fortune could create a deficiency of 50 or 100 tankers overnight, and we should be prepared for adversity," he added.

The Deputy Co-ordinator also suggested that the industry have plans all worked up for gasoline curtailment "if and when conditions of shortage develop."

Mr. Davies concluded with praise of Mr. Ickes and urging the industry to co-operate with him.

"Co-ordinator Ickes," said Mr. Davies, "is the most energetic, the most earnest and I think the most able administrator in Washington, I find him factual and fair. As Co-ordinator, he is intent upon seeing that the resources of the petroleum industry are mobilized to serve the requirements of national defense during the emergency. He recognizes the vital role that petroleum must play in the war and is most anxious that it should be played well. He has confidence in the ability of the industry to do an outstanding job, and hopes through the co-ordination of arrangement to make this industry effort fully effective and completely successful. He believes the result can be had through patriotic co-operation rather than rigid regulation during the emergency, and regards the co-ordination as purely an emergency provision for which there will no need when the emergency is over."

Oil Must Accept Challenge

Brig. Gen. Walter B. Pyron, himself an oil man in private life but now serving as assistant to Undersecretary of War Patterson, brought to the A.P.I. a plea that oil men accept the challenge of national defense as the country changes over from a peacetime to wartime basis. He asked that the industry get along with as little materials and supplies as possible but gave assurance that defense authorities at Washington will do their best to obtain what is needed to keep the industry functioning at top speed.

"The industry," General Pyron added, "must play the game fairly, however, and make such changes and sacrifices as may be necessary in carrying out the whole defense plan of the Nation."

Warns of 'Dictatorship'

Declaring that the fate of democracy itself is linked with that of management and business itself, Alfred P. Haake, of National Assn. of Furniture Manufacturers, warned that the country faces the choice of government domination of all enterprise leading to strangulation of individual resourcefulness or the preservation of free enterprise through vigorous self-discipline and wise regulation.

He said it was "pitiful to hear men pronounce ponderously that we must have government control of our economic life in order to preserve democracy." He called for business management to lead to "better production, more smoothly functioning commerce and trade, as the basis of better living."

Importance of Oil Marketing Emphasized by Frey at A.P.I.

Oil marketing's importance to the entire industry, as well as the public, should be better appreciated by many oil men in the other branches, according to Dr. John W. Frey, marketing director of Petroleum Co-ordinator's Office, speaking Nov. 6 at American Petroleum Institute's marketing division session. It was the first A.P.I. marketing session in several years.

'Marketing is Art'

PCO's Marketing Director Frey

"Marketing may not be a profession, but certainly it is an art—an art without which all of the rest of the industry would perish, for if the discovering of oil is the Alpha, then marketing is the Omega," said Dr. Frey.

"The capital and labor employed in the oil industry can, in the final analysis, be justified only by sales—the reward of the whole process," he added.

To the list of vital things that come in "threes", Dr. Frey added automobiles, good highways and gasoline.

"They are among—if not the most important — elements in that sociological complex called the 'Great American Scene'. They are the basic elements of our so-called automobile civilization; they are the physical things that make America different from every other country," the PCO director said.

Importance of Oil Marketer

"I shall not develop this subject fully," he continued, "but I do want to dip into it just far enough to indicate the importance of the oil marketer in the America of today.

"Most of us live in cities are

aware of the changes that have taken place around us by reason of people being able to live farther away from their work and commuting by automobile or buses.

"In the recent East Coast experience with gasoline restriction, I became painfully aware of the distances which people drive to work, and of factories located on virgin ground miles from any organized transportation facilities."

Population studies, he said, show that there "is a centrifugal trend in metropolitan population in which satellite cities and suburbs have grown more rapidly than the core."

Auto Shifts Populations

"Shifts in population consequent to automobiles, good highways and gasoline, because of the effects upon health and physical development, cultural opportunities, food needs and habits, real estate investments, cost of government of central cities with commuting workers, etc.," said Dr. Frey, "must be considered as part of the responsibility of the oil industry.

"The outposts of the industry in daily touch with this scene are the marketers," he pointed out.

Gasoline is just as important on millions of farms, too, he said, calling attention to the changes in farm life and distribution of agricultural products resulting from mechanization and motor transportation.

Talks of Marketing Priorities

Dr. Frey's tribute to the importance of the oil marketer today was doubly interesting in that it was a prelude to his discussion of "priorities trouble" of marketers.

OPM's curb upon non-defense building raises the question of its effect on construction of new bulk plants and service stations "except upon a showing of necessity," according to the PCO marketing director.

"Most of the marketing companies," he continued, "have sensed the difficulties of marketing expansion and have reduced or eliminated the construction of new facilities. Except for accidents, and in a few places changes in the flow of traffic, it is doubtful that there will be much difficulty if the building and remodeling of service stations and bulk plants is to be restricted."

Maintenance Important

"There is, however, a serious problem still to be worked out on the maintenance of marketing facilities," Dr. Frey added.

"Pumps wear out, valves become faulty, greasing equipment doesn't last forever, air hose and gasoline hose have limited life—in brief, corrosion, wear and tear, fires, floods, etc., take their toll in equipment that is required to serve the public. A high percentage of this type of goods is so-called shelf goods and in many instances such stocks are being exhausted.

"I do not know what OPM is going to do about this problem but our office is collaborating with them toward a solution," the PCO marketing director added.

Must Be Worked Out

"Obviously, I am not in a position to make any promises but I don't mind stating that it is my personal view that some method must be worked out by which inventories sufficient to meet repair needs must be maintained, for this merchandise is not only necessary to maintain services to the general public, but also the Army and Navy for they, too, have accidents and emergencies.

"While we as petroleum marketers are engaged in the distribution of products that yield their values by being expanded, a very high percentage of the goods used to facilitate distribution goes back as junk to the stock pile again and again," he added.

Recent amendment to the P-22 order extending the A-10 blanket priorities rating on maintenance and repairs to include "wholesaling" does *not* include bulk plants, generally, according to Dr. Frey.

'Bulk Plants Not Included'

"P-22 does not—in its present form—provide for the repair of service stations and, generally, not of bulk plants, although there is the possibility that the provision for warehousing could include some terminals and wholesaling could include bulk plants (of a rare type) that do not distribute to consumers."

He frankly admitted that the priority situation for the marketer is not satisfactory, that there "is still much work to be done."

Replacement Needs Cited

Many questions are cropping up, he said, citing:

"For example, how many marketers know how much synthetic rubber there is in a gasoline hose and how many replacements are necessary each year?

"How many meter replacements are needed annually on gasoline pumps?

"How many pounds of brass are needed annually for replacing loading valves and tank faucets?

These questions, he said, are symptomatic of "the things we suddenly wish we knew. Perhaps marketers may have to give more thought to such questions."

Oil Industry and Government Must Work Together—Cole

Talk by Rep. William P. Cole, Jr., before A.P.I. on Nov. 5.

This opportunity to renew the very pleasant acquaintanceship I have had for the past eight years with many members of the American Petroleum Institute is deeply appreciated.

I share with you very genuinely the great loss you have sustained in the death of your former president, Axtell J. Byles. If you will take the time again to read the testimony presented by Mr. Byles before the Special Committee of the House of Representatives investigating the petroleum industry, at its Dallas, Texas, session in November, 1934, you will find him at his best. Such leadership as he then displayed accounts to a considerable extent for the splendid condition of your industry at this very critical time, and for the appreciation I believe the nation as a whole has for your ability to meet requirements now being imposed upon you. He was a man of strong character, magnetic personality, cultured, devoted to his work, honest and reliable. While my association with him was always confined to problems facing your industry and with which Congress was dealing, I shall miss him very much because I had confidence in him to an immeasurable extent.

Today I appear before you, sandwiched as I am on this program between your able President, Mr. Boyd, on the one hand—whose address you have just heard—and on the other, your distinglished guest and speaker to follow, Secretary of the Interior and Petroleum Co-ordinator for National Defense, Mr. Ickes. They might be likened to the two horns of a veritable dilemma. The one bitterly opposing federal legislation of almost any kind when it attempts to regulate the petroleum industry, and the other consistently advocating federal legislation of the broadest character. I find a very comfortable place, however, between the two horns, because neither one is an extremist to the point that there is danger in what he advocates, and both are genuine Americans considering, above all, the welfare of our country and the stability of this great industry.

The task which the legislative branch of the government assumes in attempting to reconcile such differences is one with which I have had some association and about which I shall talk to you briefly at this time.

Gives Congress' View

Congress has been unwilling to accept the viewpoint of certain Governmental officials, and in 1933 and 1934 of some representatives of the industry, to confer upon the Federal government broad powers over every activity of the industry, but it has enacted helpful legislation as the result of studies during the past seven years, to assist the states in prohibiting the shipment of illegally produced oil, and has sanctioned the effort of the producing states to meet jointly some of their problems pertaining to petroleum in a way that the Constitution of the United States contemplated. In so doing, Congress has, almost during the entire period to which I have referred, directed either in the Senate or the House, and at times in both, a study of many of the problems with

Urges Teamwork

Rep. William P. Cole, Jr. . . . "there should be no undue restrictions placed on the oil industry"

which you are faced. This has been due in a large measure to the persistent and wholesome interest manifested by President Roosevelt. After the investigation by the Special Committee of the House of Representatives in 1934 and 1935, the President requested a renewal of that study with especial attention being given to a concrete proposal which I introduced at his request.

Despite the fact that many have construed the interest of the President as being directed more toward Federal control than anything else, the strong desire he has manifested in the states retaining all to which they are rightfully entitled in the field of control and regulation is sufficient in itself to refute any such assumption.

'Pleased With Attitude'

Those who have been interested in preserving our dual system of government and who are today leading the demand that our form of government—cost what it may—be preserved, must have been pleased with the attitude expressed by our great President a few months ago when the representatives of 11 of our oil-producing states presented to him personally a renewal of the Interstate Oil Compact. Recently I disclosed for the first time to the public the President's statement to that group. Because of its historic import and continuing interest to the petroleum industry, assembled as it is in such strength here today, let me repeat it at this point.

The President told us the story of a dinner party he attended in Washington during Theodore Roosevelt's administration:

"At the dinner party," the President said, "was a very famous historian—British Ambassador James Bryce. I was pretty young at the time and just listened. But I remember a statement made by Bryce after the dinner when the men were assembled in the smoking room. He said: 'You know, there is one reason why the United States ought to become the oldest form of government in the world. It is because under the Constitution you have two methods of trying new things. One method is by Federal action; the other is by using the states for experimental purposes.'

"I remember Ambassador Bryce pointed out—and this was way back in T. R.'s administration—that if an experiment worked through state action it might spread to other states or through the compact act of two or more states.

"As I listened to you gentlemen I couldn't help but think of that statement by Ambassador Bryce, one of the deepest students of our government who ever lived. And now we have the practical application here of just what Ambassador Bryce said some 30 years ago. And I feel rather happy about this.

"As I remember it, when I came to Washington some eight and a half years ago, oil was selling at a price which, I believe, brought the producers a net of about 10c a barrel—not much for them. We were faced with the problem of whether we would encourage some form of state action, through the compact method, or whether we would go to federalization of oil production and distribution. We tried the compact method, and it worked.

Cole Quotes Roosevelt on Oil Compact

"When we started the compact you will remember that I said, 'It's all right. I will try anything once. If it works—fine. Well, it has worked. That's the real answer. And I am delighted that it has worked. I will send this compact to the Congress as soon as I can.'"

This Institute contributed immeasurably to the pleasant situation to which the President referred. You should feel very proud of your efforts. It was most satisfying to the group before him at the time, practically all being associated with your industry, to find the great leader of our nation, at the time invoved in problems of tremendous import, to be able with his characteristic smile of satisfaction, refer to certain aspects of the petroleum industry in the way he did. This should be all the incentive required, if any is needed, for you to carry on to even greater accomplishments than you already enjoy.

While the national defense has been advanced from time to time in the past as a reason to support, from a Constitutional standpoint, the right of the Federal government to participate as extensively as some have advocated in controlling the industry, the real seriousness of petroleum from a national defense standpoint has not been appreciated by Congress since the World War until very recently. The Federal government has made its sallies into the oil picture principally in times of distress. Although the Federal government came to the aid of the oil companies in 1933 under the National Industrial Recovery Act, the states devised the basis of legislative and administrative control during the depression.

Sees 'Surplus' Today

Today there is a surplus of petroleum. That was not the case after the World War. A prospective shortage after the World War was overcome by new discoveries of oil between 1926 and 1931. Then the depression came along and consumers almost wrecked the oil markets by a reduction in demand.

Previously, in 1924, President Coolidge appointed a Federal Oil Conservation Board to investigate methods of production and to promote conservation in the public interest when the country faced an oil shortage. As in the recent case, the shortage became a surplus and the board turned its efforts to interstate co-operation for the restriction of production.

Federal government intervention in 1933 and 1934, although restrained by Supreme Court action, helped to stop the flow of hot oil in interstate commerce. The Connally Act followed quickly and its renewal in 1937 and 1939, extending until June 30, 1942, shows that the states are in accord with the Federal government in trying to keep contraband oil out of interstate commerce in the interest of producers and consumers.

Cites Co-ordination Need

Only in an extreme emergency, then, does the Federal government show a paternal interest in the regulatory system of petroleum. It has done so recently in the establishment, not by direct Congressional action but by executive order, of a co-ordinator of petroleum for national defense. In so doing the President indicated the need of "Co-ordinating existing Federal authority over oil and gas and insuring that the supply of petroleum and its products will be accommodated to the needs of the nation and the National Defense Program."

You will agree as to the importance of petroleum in our national defense plans at this time, and although there might be some disagreement as to the method in which the present Federal interest is established, all again agree that 100% co-operation by the industry is essential.

Rear Admiral H. A. Stuart, Director of Naval Petroleum Reserves of the U. S. Navy, recently stated:

"With a large increase in the tonnage of the Navy, larger air forces in both the Army and Navy, and the tendency for complete mechanization of various Army units in order to increase their mobility and effectiveness, the necessity for the government to possess adequate petroleum reserves in the ground becomes a constantly more important factor in the missions of the country's armed forces to provide properly for the defense of the nation and its outlying possessions and territories.

"The success of military operations at home and of naval operations at sea is becoming more and more dependent on having available for all requirements ample supplies of the best possible fuels—all of which are dependent on access to large reserves of petroleum. In war times the effectiveness of military and naval operations will be determined by the facility and speed with which both the Army and Navy can maneuver; these in turn will be dependent on an abundance of proper fuels for all purposes during the entire period of action. Any country somewhat superior in armaments, but with limited petroleum resources, attempting an aggressive war or even fighting defensively against a foe having access to prac-

First and Latest A.P.I. Chiefs Chat

Thomas A. O'Donnell, left, retired California oil man and first president of American Petroleum Institute (1919-1925) *attended A.P.I.'s 22nd annual meeting last week and talked things over informally with* 1942's *president W. R. Boyd, Jr.*

tically unlimited supplies of oil, will encounter a disadvantage almost impossible to overcome."

The aforegoing is correct and, therefore, the oil industry is on a war basis—for it makes no difference whether our country is actually at war, or whether it is the industrial source and the warehouse and transportation agent for war materials—the demands on the oil industry are the same.

An ample supply of petroleum products is fully as important to our war effort as an ample supply of steel, ships, armaments, explosives, or aircraft.

We are now producing and consuming in this country more than 4,000,000 bbls. daily, which is at the rate of 1,500,000,000 per annum. We may expect this amount to rise to 4,500,000 bbls. daily, possibly by June 1, 1942, when our industries are adjusted to an all-out war production basis.

If we become actively engaged in war where large bodies of our troops are engaged and with a very enlarged navy active, we may expect an additional consumption of at least 250,000 bbls. daily.

Huge Demands from Russia

With the transportation system of Russian oil from the Caucasus already severed by the Nazis, it will be necessary to furnish Russia huge quantities of oil if she is to continue the war. Adding to the above, additional demands from Canada and Great Britain, a total demand of 5,000,000 bbls. daily within 18 months is not unlikely. It is obvious that such an enormous increase in demand would call for a vast development program. The Federal government must either make accessible to the industry the necessary pipe and other materials, or cut civilian consumption to meet the safe ability of the industry to produce.

On the basis of present consumption in the United States of 4,100,000 bbls per day, and taking into account the lessened production in Russia, and the withholding of Dutch East Indies production from Japan, it is probable that we produce more than 70% of all the oil in the world today.

If we add to our production the production of those countries friendly to the Allies or under their control, we find that the Allies control between 96% and 97% of all the natural and synthetic oil in the world. That picture looks pretty healthy—does it not?

But let us examine it a little closer. At the beginning of the War, the Allies with us, (omitting Russia, which has furnished Germany only a few million barrels), controlled 98½% of all the oil production, including synthetics, in the world.

Hitler's enemies have permitted him to over-run country after country, and at the end of each campaign to have captured in the tanks more oil than it cost him during the campaign. The failure to destroy Roumanian oil fields and refineries made possible Germany's Central European economy. It made possible the Balkan and Russian campaigns. This failure will be recorded by many historians as one of the blackest scandals in the war.

Oil is the very essence of modern war. It is not enough that you have supplies for your own needs, but it must be denied your enemies. If the oil production and refineries of the Caucasus fall into Hitler's hands, undoubtedly it will prolong the war a number of years and make its outcome less certain. Hitler cannot, with his present supply of less than 200,000 bbls. per day, carry on an industrial economy for 300,000,000 people and at the same time conduct a long and vigorous war. Hitler's present supply is insufficient for all of Central Europe. This area used more than 400,000 bbls. daily during peace times. Certainly he cannot long continue a war on less than one-half that amount.

This is an oil war—and the outcome depends on how wisely we use our own oil and how cleverly we deny it to our enemies.

Such being the case, the American public might look for very definite demands upon them for the curtailment in the amount of petroleum and its products. It is fortunate, therefore, that the East Coast states have been subjected to the experience recently with reference to the transportation of petroleum products in that area. A trifle over-anxious perhaps, but sincere in their efforts to avert a possible oil shortage in the East, the officials of the Federal government, who are cooperating with the state regulatory bodies and the oil industry during this emergency, made certain recommendations.

The Petroleum Coordinator was acting as the representative of the President of the U. S. when he requested a voluntary curtailment of consumption of motor fuel in certain states and imposed a gasoline curfew affecting principally the consumers of the East, where over 50% of the total production in the country is consumed.

During the emergency the President, under the Priorities Act, when he is satisfied that the fulfillment requirements of the U. S. will result in a shortage of any material for defense, or for private account, or for export, may allocate such material in such a manner and to such extent as he may deem necessary, or appropriate in the public interest and to promote the national defense.

During normal times there were interstate problems and conflicts in the industry that called for action of the Federal Government as a reinforcement to laws and efforts of the industries and producing states. Under the tremendous emergency setup, Federal supervision of the allocation of production, of refining, and of prices of petroleum in relation to other fuels has come about. Supervision during the emergency should be of a cooperative nature. These cooperative measures must not over-centralize power in the hands of either State or Federal government during the National Defense Program, but they must tend to balance the powers so that harmony will exist among all interests, all oil-producing states, and the people as a whole.

Teamwork Needed

The defense program covers unfamiliar ground. Even the most experienced players in the teams of government, business and industry have confronted unexpected situations. Rules of the game are subject to rapid change. Government and business must study and learn together. Mistakes will be made; successes will be won. But consistent scoring of the government and the oil industry will come from cooperation and team play.

The transportation problem in the East, as recently developed, gives emphasis to the need of augmenting all methods of transportation, not only to the East Coast but also to all sections of the country that are contributing to national defense preparations. That means building of large, high-speed tankers even though the British may give back 10, 15, or more tankers. This transportation problem should be a lesson to us. We

A.P.I. Hears Technical Discussions On Refining, Marketing, Truck Design

Recent important technical developments in all branches of the oil industry were reported at the technical sessions of the A.P.I. meeting.

The importance of maintaining fully adequate fire protection at oil plants, to insure that operations continue uninterrupted during the present defense emergency was emphasized by H. J. Wilson, San Francisco, of Tide Water Associated, at the Fire Protection session Nov. 4. He described in detail the various economic factors that should be studied by an oil company in planning fire protection measures.

A demonstration of the characteristics of gasoline and liquefied petroleum gas which affect fire hazards was given by Max B. Anfenger and O. W. Johnson, San Francisco, of California standard.

At the Automotive Transportation session Nov. 4, E. M. Fitz, San Francisco, of Shell, described new designs of tank truck equipment which his company has adopted to meet present conditions. Included were combination units for delivering gasoline and heating oil from the same truck load; demountable units for carrying varying proportions of bulk and package goods into areas of small consumption; transport trucks and special equipment for serving aviation and army needs. (*See story page* 33.)

Urges Truck Pool

Frederick C. Horner, New York, General Motors Corp., urged immediate planning for pooling the nation's truck and bus facilities for wartime service as needed.

The value of reaction chambers on thermal cracking units was discussed by R. C. Mithoff and L. F. Schimansky, of California Standard, at the refining session Nov. 6. A new oil-decolorizing and clay-reactivating process was described by W. B. Chenault and A. E. Miller, New York, of Sinclair. Additional data on the method for removing undesirable sulfur compounds from gasoline by the use of caustic-methanol was discussed in a paper by C. F. Mason, R. D. Bent, and J. H. McCullough, Philadelphia, of Atlantic Refining.

Propose Standard Test

A proposed standard form for a laboratory engine test for oxidation and corrosion characteristics of heavy duty motor oils for gasoline and diesel engines, was presented at the refining session Nov. 7, in a report from a committee of the Lubricants Division of the Society of Automotive Engineers. The report was given by J. A. Moller, Chicago, chief products engineer for Pure Oil.

Development work in improving motor fuels through selective blending of light or heavy cuts of straight-run or cracked gasoline and by the use of selected organic chemicals, as being carried on by the Pure, was described in a paper presented by C. R. Wagner, manager of research and development for that company. The report of the Co-operative Fuel Research Committee's 1941 road detonation tests was also presented at this session.

Refining Technology Edition To Review A.P.I. Papers

Refining Technology Edition of NPN will carry, in Nov. 26 issue, reviews of the technical papers and discussions presented at the refining sessions of the A.P.I. meeting.

should now see the dangers of concentrating petroleum transportation on one method.

Tankers, heretofore, have delivered about 95% of the petroleum consumed by the East Coast states. 82% of this amount, or about 1,250,000 bbls. per day, is moved from the Gulf Coast to the East in approximately 260 domestic tankers.

It is time to build and recondition more railroad tank cars, more barges, and more tank trucks. It is time to improve existing pipe lines, to complete pipe lines now under construction, and to quickly remove all objections and blocks to proposed pipe lines that will aid in the National Defense Program. This huge building program is one of the greatest conservation measures our country has ever undertaken. We are building not only to safeguard our petroleum supply by expanding our transportation facilities, but also to protect the life blood of commerce and industry.

Progress Depends on Oil

The progress of the people as a whole depends upon this life blood of commerce and industry—petroleum. Without substantial petroleum reserves, without efficient transportation from sources of supply to manufacturers, there is a threat to the sound economic condition of our country.

Since petroleum is so vital to the life of the nation, and to its continued existence in case of enemy attack, private promoters of pipelines were given the right of eminent domain if the President declares by proclamation that the building of the interstate pipe line is or may be in the future necessary for national defense. This law, Public No. 197, was passed during the first session of the Seventy-seventh Congress on July 30, 1941.

It must be understood that this law does not indicate a permanent policy of federal aid to pipelines. These powers, which were given to the President in the interest of conservation and the public welfare, expire after June 30, 1943. The law also provides that whenever private agencies are unable to construct a pipeline, the President may make provisions for the construction and operation by a government agency. This operation, however, shall not continue for more than one year after the present national emergency is terminated.

Until the recent governmental interest in the oil situation in the East Coast states, the paramount interests of the consumers were bound up in state and national conservation laws, and in the technological progress of the oil industry. One of the significant outcomes of the oil situation in the East is the fact that the general public has been made aware of its reliance on the future development of the oil industry for its comfort, happiness, and prosperity. The people have been shown also that they need to become better acquainted with this great industry.

The necessity for the public's education in the progress of the oil industry as it relates to the future welfare of the people of the nation was stressed by the governor of a new member of the Oil Compact, Gov. Sam Jones of Louisiana, at the recent meeting of the Interstate Oil Commission.

Should Keep Oil Men Informed

I am in agreement with Governor Jones and others who have voiced the conviction that the people of the U. S. must be informed regularly on what is being done in the development, transportation and conservation of petroleum for the public welfare by the industry, the state regulatory authorities, the Oil Compact Commission, and the State and Federal governments. This valuable information will develop the people's appreciation of the great strides that the oil industry has made and impress on them the tremendous part that petroleum plays in their lives and in the success of the defense program.

Under the guidance of the American Petroleum Institute and other organizations, the public is gaining some knowledge of the technological progress that is being made by the industry, and how this progress affects the public's everyday life.

It is necessary that the public obtain a practical knowledge of many phases of the oil industry if it is to be sympathetic with the industry in emergencies such as the National Defense program and its extraordinary demand on the oil companies. This understanding of problems that may arise, such as the recent one of transportation, can be attained only by the wise dissemination of information.

Discord Must be Eliminated

Unanimity of purpose is the backbone of the National Defense Program, and there must be no discord at this time. There must be a powerful unified movement of citizens, producers, and state and federal officials in order to make conservation a part of the defense program. There must be uninterrupted flow of petroleum from producers to consumers, whether they be civilian or governmental. There should be no undue restrictions placed on the oil industry by state and federal authorities if our gigantic task is to be accomplished and the American way of life to be continued at all times.

With the realization of the ever changing international situation and the seriousness its effect upon the future of our country might very readily assume, I again repeat the confidence which I believe the people of the U. S. have in this great industry, and its ability to perform, as of necessity it must, a most essential part in the successful program now functioning for the perpetuation of our Democratic form of government.

You who believe in free enterprise regulated in the public interest or in what may be called "humanized capitalism", have to meet the challenge of making that system constantly even better for the common weal. Any failure to meet the peak loads of these crowded days will be seized upon by the enemies of free enterprise as an excuse for the taking over and nationalizing of industry. The excuse may not be valid, but the loads imposed on industry by government may be arbitrary and unpredictable.

Congress is sympathetic with what you are called upon to do, and is pleased to find the President of U. S. taking time out from his day and night labors to comment favorably upon some aspects of your work. Administrative agencies will function under definite limitations and be given every reasonable assistance as is from time to time required. As you continue to foster the preservation of our form of government and meet successfully through cooperative effort the unprecedented demands imposed by the National Defense Program, only laws of a helpful and not of a restrictive and impeding nature pertaining to your industry should be enacted.

Reassured as I have been at this meeting, I shall return to Washington deeper in my conviction that the challenge of certain tyrannical powers has only served to strengthen the purpose and resolve of the United States of America, that free government shall not perish but live on in renewed strength and security.

PCO to Last Only Through Emergency, Ickes Tells A.P.I. Meeting

Petroleum Co-ordinator Ickes views his office as an emergency agency, to be discontinued when the emergency ends, he told the American Petroleum Institute's 22nd annual meeting in San Francisco last week.

Devoting most of his address to a review of PCO's activities, Mr. Ickes approached the subject of federal oil control, he said, "because I would not want any man here to think that I was dodging an issue that, to my knowledge, has been in the minds and on the lips of many." His discussion of the federal control and conservation issues and of the oil industry's future job in meeting war's demands is contained in the following portion of his address:

While we are enjoying at the moment in the oil business weather so fair that I would not venture to characterize it as other than Californian, there is no guarantee that we can continue, indefinitely, to luxuriate in unrestrained petroleum consumption.

As you know, your government has adopted, as a national policy, the furnishing of sufficient tankers to the British to make it possible for them to take the hurdle of Hitlerism. There may be oil "experts" and "cracker-box statesmen" who feel qualified to foretell just how the Battle of the Atlantic will be going a month from now, or six months from now, but your co-ordinator does not

Ickes Denies 'Czar' Ambitions

The two horns of Mr. Cole's dilemma

(See page 27)

possess supernatural powers. The British may be able to get along with what tankers they have left. On the other hand, they may ask for many more than the number with which we have supplied them in the past. And if they ask we will give.

100-Octane Need Cited

I suspect that the tanker situation will be a troublesome one during the duration of this emergency. Besides this problem, the oil industry is already called upon to face others. All of us know that a grave inadequacy has been rapidly developing as to 100-octane aviation gasoline. In fact, some of you were in Washington on August 12, when I asked that immediate steps be taken to double our 100-octane manufacturing capacity. Later, when it became evident that even this would not provide for already foreseeable demands, I set in motion processes to determine how we could not only double, but treble, our output.

A nationwide survey, as of mid-October, demonstrated that our manufacturing capacity of 100-octane gasoline amounted to a total of 43,278 bbls. a day. Plants now nearing completion will add 2,557 bbls. daily by Jan. 1, 1942. Additional arrangements have been made which will mean another 11,994 bbls. a day by Jan. 1, 1943. Thus, we discover that 13 months from now our overall production of 100-octane gasoline will be an inadequate 57,829 bbls. daily.

The country will not be satisfied with such a meager effort. A potential of 100,000 bbls. daily by Jan. 1, 1943, will not come anywhere near supplying our own needs, in addition to those of Britain, Russia, and China. Fortunately, we can increase our 100-octane capacity to 100,000 bbls. daily by Jan. 1, 1943, if the refiners are willing to do what our survey indicates ought to be possible. Capacity can be boosted during the next year by about 41,700 bbls. This would make a national output of approximately 100,000 bbls. daily by 1943. There is also the possibility of adding another 3,000 bbls. by the improvement of base stocks.

Even if we achieve this result we will still be 20,000 bbls. daily short of what the forecasts indicate that we shall need by 1943.

Government To Finance

Your government stands ready to assist in the financing of new refining facilities and equipment. Secretary Jones has said that he will be willing to enter into contracts on behalf of the government for your future production of 100-octane gasoline covering a period of from 2 to 3 years. The oil industry has risen to many an emergency in the past. It will not refuse the hurdle when its country is mustering all of its resources to defeat a man who is proving himself to be a brigand on land and a pirate on the high seas.

Unfortunately, we are not even sure that we have sufficient capacity for producing all of the ordinary gasoline that we will need. Our refiners of motor fuel are new pretty close to 100% capacity and the demand continues to rise.

Together, the federal government and the oil industry have already done much. But while we may stand proudly upon our record, we must not go to sleep upon it. The most important tasks lie ahead. If the possession of oil will determine the conflict that rages in Europe, we cannot fail to supply whatever petroleum may be necessary to achieve our objective. We have the oil and the tankers, but it is up to you men, who, by your initiative and daring, have made this the great industry that it is, to see to it that the petroleum products are produced in such quantities and of such types as may be necessary to keep a full line of tankers carrying them to those who are fighting America's battle—100-octane gasoline for their airplanes, regular gasoline for their trucks and tanks and fuel oil for their ships.

If I now turn to the subject of possible federal control of the oil industry it is because I would not want any man here to think that I was dodging an issue that, to my knowledge, has been in the minds and on the lips of many. I am fully aware that, for reasons that I shall not take the time to analyze, or even the trouble to characterize, an effort has been made, ever since I was administrator of the oil code under NIRA, to poison the minds of the people in the oil industry by charging that, if I could, I would take over and run your business. I hope that there are some among you who will agree that anyone who would deliberately set out to get control of the oil industry is the kind of a fellow who would want to be foster father to the "Dead End Kids".

No Control Wanted

So far as I know, the government does not want to control the oil business. Here in California and elsewhere I have been characterized as "Oil Czar" Ickes or "Would-be Oil Czar" Ickes. All of you know that the first characterization is not true, and if it serves the purpose of any one to pretend that the second fits me he is welcome to his delusion. All of you also ought to know that my duties under the order issued by the President are merely those of a coordinator. I have neither the power nor the will to impose federal control upon the oil industry.

I view the Office of Petroleum Co-ordinator as an agency created to do a necessary work during the emergency—an agency that will be discontinued when the emergency ends.

However, I do avow frankly, that I believe in the conservation of petroleum, as I believe in the conservation of all of our natural resources. And by "conservation" I do not mean withholding from use. What I mean is present prudent use, while preserving, for the welfare and happiness of our children, and theirs, all that we do not actually need for ourselves.

In this country we have thrown away our wealth with both hands. The prodigal son was a very Scrooge compared with some of our so-called conservative business men. Sometimes we have indulged in waste simply because of our ability to waste. Only when the people have become persuaded that their resources were being recklessly, or even criminally wasted, have they sought to impose upon the exploiters a policy of conservation.

Warns on 'Waste'

And so, today, we have established conservation in many fields. We are conserving what is left of our cut-over timber lands. We are conserving areas of great scenic and recreational value. We are conserving our fish and wild life, our game birds and even the forage on the public domain which, until this administration came into power, was being rapidly destroyed through over-grazing, thus threatening our important livestock industry.

What I am leading up to is that if the federal government ever imposes any measure of control over the oil industry, it will be in the interest of conservation. Wasteful practices, sooner or later, bring some type of federal control. And wasteful practices in the oil industry will also bring some measure of control—probably not during my tenure of public office—but yet surely and inevitably. The way—the only way—in which to make unnecessary such control as will prevent waste and intemperate exploitation will be for you to exercise that measure of self control which will persuade the government that you are managing your own affairs so competently, so wisely and so patriotically as to make unnecessary any interference by the people.

Must Conserve Oil

Do not forget that petroleum is an exhaustible and irreplaceable natural resource. Not only does our commerce and our industry and our husbandry and our pleasure depend upon it, this war demonstrates that the possession of an abundance of petroleum and its products is a matter of life or death to a nation. And our own nation would be negligent of its duty, recreant to its trust, if it permitted any industry to waste

As Ickes Sees It . . .

"I have come all the way across the continent, comfortably and expeditiously, for the pleasure of meeting with you today. I traveled out of Washington to Chicago on a streamlined train, and from Chicago to San Francisco I rode the *City of San Francisco*. I confess that when I applied for reservations I was relieved to be assured that I could travel on a Pullman car. I had feared that Mr. Pelley might insist that I fare forth in one of his 'unused' but 'usable' tank cars. As a matter of fact, I would not have been surprised if he had waved his magic wand again and assembled 22,000 of them at the Union Station to show me what a variety he could supply—little or big, in good or in bad order, clean or dirty.

"Anyhow, I am glad to be here. Whatever may have been the situation on the East Coast with respect to oil in the recent past, I can detect no shortage of oil men here and, as I have observed the contours of not a few, including myself, I am bound to say that, generally speaking, there isn't even a 'shortage of surplus.'

'Cold' Man for 'Hot' Job

"I have been given to understand that you want me to talk about oil in relation to the present national emergency. So, I shall talk about oil. I probably won't tell you anything that you don't know. On the contrary, you may shake your heads commiseratingly that, after all of the fuss that has been made about the Petroleum Co-ordinatorship, I should know so little. Anyhow, I hope that you will not insist upon hearing from me only what you want to hear.

"I had no notion that the President was going to appoint me Petroleum Co-ordinator and so I had not boned up to pass my entrance examinations. I took the job cold; that is, if anyone can properly apply that adjective to as hot a job as this almost immediately turned out to be. Perhaps it would be more accurate to say that it was the Co-ordinator who was cold and not the job. But, even if you accept this amendment, I must confess that if I was cold at the start, I soon found that there were some 'generous-minded' people who were quite ready to put me on a hot spot."

Above remarks were made by Petroleum Co-ordinator Ickes as he opened his address Nov. 5 at American Petroleum Institute's 22nd annual meeting in San Francisco—Ed.

such a valuable natural resource.

May I say, out of my friendly interest in the oil industry, and as a man who has come to know you and to appreciate you, better perhaps than I once did, that such practices as obtain in my own state of Illinois and in this state of California, are better calculated to bring about at least some measure of federal control of the oil business than a thousand "Would-be Oil Czars." You have had the power to stop these practices; you have such power today. But you have not exercised it.

Sees 'Inconsistency'

Surely, you will admit the inconsistency of a company that employs conservation practices in one state while indulging in malpractices in another. I have protested vigorously the terrible, the criminal, waste that has gone on in the Illinois oil fields ever since the first well was put down. But greedy and corrupt politicians and facile-tongued wild-catters have produced such a state of mind among the farmers, on whose lands that oil has been found, as to convince them that the surest and quickest way to wealth is recklessly to destroy wealth.

I gladly concede that, generally speaking, there is far more observance of conservation practices in the oil industry than there was formerly. In this regard some companies are far ahead of others. But there is still too much waste, although this varies as between companies and localities. Considering the rate at which our petroleum resources are being exhausted, and considering also our reserves in comparison with those in other parts of the world, you will agree, I am sure, that no preventable waste of oil or gas ought longer to be permitted.

Cites California 'Waste'

If I were a Californian, I could not rest until some curb had been put upon the tooth and claw practice which has characterized the oil and gas industry of this state since the beginning. Proration of a sort you have had, voluntary, and effective enough to preserve a degree of economic stability. You of California have had the so-called "Gas Law", honored, perhaps, as much in its breach as in its observance. You have finally achieved the "Acre Spacing Law"—doubtless a step forward in a state which has witnessed such sights as "Hell's Half Acre" and town-lot drilling in prolific fields such as those of the Los Angeles Basin.

What will you do for essential energy resources a score or so of years from now? This great empire, far removed from considerable coal deposits, will buy back at increased cost and transportation hazards the oil so freely exported and even unnecessarily dumped into the eastern markets. Must we import oil, or bring it from the East, to fuel the Pacific wing of our two-ocean Navy which is of such vital importance to your own state?

The way for you to avoid an oil "Czar" is to eliminate such wasteful practices, as all of us know still exist in the oil business. It would be well to remember that the people endured patiently for a long time the unlimited taking of game. Remember, too, that it was the transgressions of the railroads that resulted in the creation of the Interstate Commerce Commission. It was disregard by business of the rights of the individual that brought about the Anti-Trust laws. Public power is well on its way because of the oppressive practices of the private utilities. The Securities-Exchange Act sprang from the loins of Wall Street itself.

Since public correction inexorably follows private excesses, although sometimes tardily, the point need not be labored that the only sure way for you to prevent ultimate governmental regulation or control of the oil business is voluntarily to remedy the excesses.

57 Places on A.P.I.'s Board Filled at West Coast Meeting

Fifty-seven places on American Petroleum Institute's board of directors were filled—mostly by re-election—at annual meeting here this past week, including the filling of two vacancies caused by death. Number of directors remains unchanged at 110, with terms of half expiring at this meeting and the other half at 1942 meeting.

Board of Councillors, presided over by W. H. Dodge, New York, of The Texas Co., nominated—and the board elected—47 directors, as follows:

PRODUCTION — Pacific Coast: L. L. Aubert,* Bankline Oil Co., Los Angeles; W. M. Keck,* Superior Oil Co., Los Angeles; Thomas A. O'Donnell,* Los Angeles; Rocky Mountain, B. B. Brooks,* Consolidated Royalty Oil Co., Casper, Wyo.; Central United States, Jake L. Hamon,* Cox & Hamon, Dallas; E. A. Landreth,* Landreth Production Corp., Fort Worth; E. H. Moore,* E. H. Moore, Inc., Tulsa; Henry L. Phillips,* Sinclair-Prairie, New York; Ralph Pryor,* Pryor & Lockhart, Wichita, Kans.; H. R. Straight,* Cities Service, Bartlesville, Okla.; R. L. Wheelock,* Wheelock & Collins, Corsicana; H. C. Weiss,* Humble, Houston; Eastern United States, P. H. Curry,* South Penn, Pittsburgh.

REFINING — Pacific Coast, A. S. Russell,* California Standard, San Francisco; Rocky Mountain, T. A. Dines,* Utah Oil & Refining Co., Denver; Central United States, T. H. Barton,* Lion Oil Ref. Co., El Dorado, Ark.; Alexander Fraser,* Shell, New York; D. J. Moran,* Continental, Ponca City, Okla.; Eastern U. S., Robert H. Colley,* Atlantic, Philadelphia; B. I. Graves, Tide Water, New York; W. S. S. Rodgers,* The Texas Co., New York.

MARKETING—Pacific Coast, H. D. Collier,* California Standard, San Francisco; Charles S. Jones,* Richfield, Los Angeles; Rocky Mountain, W. H. Ferguson,* Continental, Denver; Central U. S., Henry M. Dawes,* Pure, Chicago; I. A. O'Shaughnessy,* Globe, Minneapolis; E. G. Seubert,* Indiana Standard, Chicago; Eastern U. S., W. T. Holliday,* Ohio Standard, Cleveland; E. W. Sinclair,* Consolidated, New York.

TRANSPORTATION — Ships, J. Howard Pew,* Sun, Philadelphia; Pipe Lines, D. S. Bushnell,* Northern Group of Pipe Lines, New York.

SUPPLY — Earl. W. Miller, American Iron & Machine Works, Oklahoma City; Fred F. Murray, Oil Well Supply Co., Dallas.

NATURAL GAS — N. C. McGowen,* Union Producing Co., Houston.

NATURAL GASOLINE — D. E. Buchanan,* Hanlon-Buchanan, Tulsa.

AT LARGE—J. Frank Drake,* Gulf, Pittsburgh; W. S. Farish,* New Jersey Standard, New York; B. F. Harris,* National Tube Co., Pittsburgh; George A. Hill, Jr.,* Houston Oil Co. of Texas, Houston; A. Jacobsen,* Amerada Petroleum Corp., New York; John M. Lovejoy,* Seaboard Oil Co. of Delaware, New York; J. F. Lucey,* Lucey Petroleum Co., Dallas; R. Ogarrio, The Texas Co., New York; J. Edgar Pew,* Sun, Philadelphia; Frank Phillips,* Phillips, Bartlesville, Okla.; E. B. Reeser,* Barnsdall Oil Co., Tulsa; H. F. Sinclair,* Consolidated, New York.

In addition to the 47 members of the board nominated by the Board of Councillors and elected by the membership, 10 additional directors were elected by the board itself, eight to succeed directors whose terms expire and two to fill vacancies caused by death.

The new directors are: E. R. Brown,* Magnolia, Dallas; H. R. Gallagher, Woodside, San Mateo, Calif.; W. F. Humphrey,* Tide Water, San Francisco; W. A. Jones,* Cities Service, New York; H. T. Klein,* The Texas Co., New York; T. Rieber, Barber Asphalt Co., Barber, N. J.; W. C. Teagle,* New Jersey, New York; Alex Walker, National Supply Co., Toledo; L. S. Wescoat,* Pure, Chicago; and Ralph Zook,* Sloan & Zook, Bradford, Pa.

Mr. Rieber succeeds Paul Ryan, formerly with National Refining Co., Cleveland. Mr. Gallagher was elected to fill the unexpired term of the late E. W. Marland on the at-large group, and Mr. Walker will complete the term of the late P. C. Jones, Toledo, on the supply group.

Messrs. Miller and Murray succeed W. M. Bovaird, of Bovaird Supply Corp., Tulsa, and E. W. Gildart, Norvell Wilder Co., Beaumont, Texas. Mr. Graves succeeds H. R. Gallagher, and Mr. Ogarrio succeeds T. Rieber, formerly with The Texas Co. but now with Barber Asphalt Co.

*Indicates re-election.

A. P. I. Resolves to Co-operate With Government for Defense

Every one in all branches of the oil industry was called upon by the American Petroleum Institute, in a resolution adopted Nov. 5, to give "to the Petroleum Co-ordinator and all other government agencies every type of co-operation that is essential to national defense by the most apt means and expeditious routes that can be devised."

In another resolution adopted, the A. P. I. opposed changes in federal tax regulations until they are specifically authorized by new legislation. The resolution was aimed especially at a memorandum of the Internal Revenue Bureau's general counsel seeking to make changes in long-established methods of computing depletion allowances.

Deceased Members Honored

Memorials honoring the late Axtell J. Byles, A. P. I. president from 1933 to 1941; E. W. Marland, Ponca City, Okla., oil man, and Percy Jones, Toledo, equipment supplier, were adopted. All three died during the past year.

Safety Records Told At A.P.I. Meeting

A new world's record of 5,791,899 man hours of work without a disabling injury was announced at the American Petroleum Institute meeting here this week by W. R. Boyd, Jr., A.P.I. president.

Record was established by the refining department of Indiana Standard. President Boyd expressed regret that the 5,791,899-hour record was interrupted by fire at the Whiting, Ind., refinery Sept. 24.

Another new world record was announced also for a refinery, the Wood River refinery of Indiana Standard having completed on Nov. 3 a total of 5,568,423 hours without a disabling injury.

Truck Transportation of Flammables Discussed at A. P. I. Meeting

Development in truck transportation of flammable liquids on the West Coast was discussed Nov. 4 at the Automotive Transportation group session of A.P.I.'s 22nd annual meeting by E. M. Fitz, San Francisco, of Shell Oil Co., Inc. Full text of Mr. Fitz's paper follows:

You will recall a statement by Mr. Markham that man's ability to transport himself from where he is to where he wishes to be, and to move his goods from where they are to where they can be used, is a yardstick of civilization. The more rapid and enduring progress has been made by those people who have transformed transportation from a problem into a science and have changed mobility from a privilege to a benefit. With the help of the truck manufacturers, the tank builders and the suppliers of the numerous items of truck delivery equipment, our petroleum trucks engaged in the transportation of flammable liquids should measure up very favorably under Mr. Markham's yardstick.

Service Requirements Control Tank Truck Design: Wide extremes of truck operating conditions are peculiar to the Pacific Coast area. Here will be found the hottest and the coldest sections of the United States —temperatures from 130°F. to 50° or 60° below zero. One operating district has the lowest and also the highest elevations in the Country—280 ft. below sea level and 14,000 ft. above sea level. It is true that our trucks do not travel to that height but they do go over passes with elevations from 9000 to 10,000 ft. A single truck, operating from a plant in a valley a few hundred feet above sea level, may start on a trip in a temperature of 60° and within an hour or two be in a snow storm at an elevation of 6,000 or 8,000 ft.

Sales outlets which must be serviced by delivery trucks are as widely varied. The valleys present the usual run of cities, towns and rural areas. The back country is dotted with mines, lumber mills, resorts and large ranches, in mountainous territory, many in all but inaccessible locations.

These widely varied operating conditions have a distinct influence on tank truck design. A single truck tank may have a number of optional specifications with regard to the chassis on which it is to be mounted and its delivery equipment and accessories. A light chassis may be selected for valley work, a medium unit for fairly rugged terrain, or a heavy duty chassis with high power to weight ratio for hilly and mountainous areas.

The same tank will have a wide variety of optional delivery devices — simple faucet discharge outlets, meters, quantrol automatic measuring devices, and printing counters for stamping the delivery ticket with the gallonage delivered; power pumps for pressure deliveries; long hoses and hose reels; or an assignment may require a more or less complicated system of manifolding several compartments to a single meter with selector valves.

Special Types of Service requirements have called for specialized equipment for efficiency in deliveries. Power pumping, aviation service, home heating oils and the fueling of contractors' equipment have increased enormously over the past few years. Within the past few months we have had to take over the work of refueling army convoys and to give some thought to the problem of refueling an army under fire.

Home Heating Oil Service is largely a seasonal business, fluctuating widely within a single season. A combination type of tank truck has become quite popular for this service. Two separate discharge systems are provided, one with power pump, meter, long hose and hose reel for burner oil deliveries, the other with gravity meter for gasoline deliveries. In a typical unit a selector valve is installed in the pipelines by means of which either discharge system may be selected, completely isolated from the other. This truck may be used for burner oil in the winter and swung over to gasoline in the summer. During the transition period the load may be divided between motor fuel and burner oil. With compartments separated by double bulk heads and with selector valves, locked or sealed by the loader at the loading plant, the possibility of contamination during delivery is completely eliminated. This combination type of truck may be kept in active service the year round, being readily adaptable to changing requirements and eliminates the need of maintaining special equipment for seasonal business.

Power Pumps: Service requiring pressure deliveries has expanded rapidly and an increasing number of trucks are being equipped with power pumps. The pumps may be operated by the truck engine through transmission power take-off, or by auxiliary gasoline engine or electric motor. The auxiliary unit may be a permanent installation or may be portable. One problem in pump and meter units with long hose has been created by the stretch in some hoses under pressure, causing a certain variation in measurement.

Servicing of Contractors' Equipment: The servicing of contractors' equipment working on location has presented an increasing array of problems. The tremendous amount of new construction work, particularly highways, army camps, airports, and dams in connection with reclamation and power projects has imposed serious burdens on our delivery equipment. A typical unit for this work is equipped with power pump, meter and long hose, and space for the numerous special products required in this service.

Aviation Deliveries have required a great deal of attention. This is particularly true in connection with servicing the Army and Navy equipment. Although both refueling pits and tank trucks are in common use, our interest lies in the latter. A complex arrangement of truck delivery equipment is required to meet demands for several grades of aviation motor fuel, lubricating oil, compressed air, and other specialized services. To illustrate, one unit in mind is equipped to carry 5 grades of aviation fuel each with separate meter, quantrol, hose and reel, each completely isolated from the others. A sixth hose and reel is provided for suction. All outlets and hose reels are power operated. Compartments in the skirting carry lubricating oils, compressed air and water indicators and drains.

Direct Deliveries: An outstanding development of the past 10 years in the practice of making deliveries direct to service stations from refinery or terminal by large capacity tank vehicles. Substantial economies are being made in delivery operations. The greater part of the savings result from the elimination of the additional cost involved in storage and handling at the local distributing plants. There is frequently no saving in freight costs. The operation has been proved safe as well as economical. The safety record has been excellent.

The most common type of equipment is the tank semi-trailer of 4,000 to 5,700 gal. capacity, constructed to A.P.I. Standards No. 1,001. Truck and trailer combinations are also used in this service, the trailer being restricted with regard to service station deliveries.

Army Convoy Refueling: Problems in the refueling of army convoys have been increased by the lack of standard methods of handling the service. The plans for a particular convoy are generally specified by the officer in charge. Some require the refueling at a central location with all units of the convoy passing this point. Others call for refueling after the convoy units have been parked.

The central refueling point appears to provide the fastest operation, particularly if the convoy can be passed in several lanes. This method however, backs up the trucks on the road and creates traffic congestion and delays. Refueling after parking probably offers the least confusion. There are no delays in getting the personnel into bivouac, roads are not blocked and if the trucks are properly parked in rows which will permit the refueling units to pass between, the operation may be completed in a reasonable time.

Many types of special equipment have been designed for the work, governed largely by the size of a convoy and the service requirements. Discharge outlets may be temporarily located in rows, isolated from the supply truck, and positioned to permit the convoy to pass in lanes, one on each side of each outlet. The power pumps may be operated by the truck engine or by auxiliary power units.

When a mobile station is desired, a tank truck may be fitted with multiple unloading lines. A typical unit has 8 discharge outlets, 4 on each side, each with separate meter and long hose, all power pump operated. One connection is so designed that it may be changed to suction and attached to a reserve tank truck, and the supply of product maintained in the refueling unit without interruption.

Refueling an Army Under Fire

The National Defense Program makes it imperative that some thought be given to the refueling of an army under fire. The trucks of many industries can be quite freely interexchanged or pooled with little handicap to their operation. Oil tank trucks however are definitely restricted to one field, and the problem is one for the industry to solve. We should not be lax in developing practical plans for meeting an emergency.

The first reaction to the expression "refueling an army under fire" is a visualization of the special contact fueling units developed by the Army with all-wheel-drive for traversing rugged terrain. Oil company delivery trucks are essentially of conventional design with rear axle drive, for highway transportation only. It is doubtful if many all-wheel-drive tank vehicles suitable for off-highway operation are available from these fleets. Nevertheless there are countless demands that may be made upon this equipment that will involve highway service only.

An Army under fire must receive a constant stream of supplies moved up to its supply bases by motor vehicles of private industry. The responsibili-

ty for supplying the petroleum requirements should rest with the oil companies having established storage and delivery facilities in the area.

In general, the service would consist in transporting motor fuel, lubricating oil and other petroleum products from the nearest source of supply, such as existing bulk plants or from temporary storage that might be established, to the Army parking and concentration areas, airports, convoys, etc. Deliveries may consist of contact fueling or replenishment of small storage established at these points, or the refilling of the Army refueling units confined to the area.

The contact servicing of equipment at points inaccessible to highway tank trucks and in zones of fire should be handled by the special units developed for that use.

Basic Factors of Design: There are 3 basic factors that require consideration in the designing of today's delivery trucks—serviceability, safety and appearance.

The first 2 go hand in hand. Serviceability implies a maximum of quick, convenient and dependable deliveries, but none of these can be neglected at the expense of safety in operation. Nor can the factor of appearance be overlooked. A sales truck is a moving billboard carrying the company's name. It must be of attractive design and pleasing appearance to create a favorable impression on the public. It is not necessary that our trucks incorporate the last word in extreme styling, but they must be designed with an eye to the future in order that they will not be outmoded before a reasonable life has been obtained.

Truck tank mountings have necessarily become more complex with the increasing service requirements. A few years ago, one or two fairly simple specification sheets were sufficient for an order for a new mounting. Today, a number of drawings are required, and frequently, a considerable amount of engineering and drafting work is necessary. This may be due, in part, to new service demands, or to make possible an increased efficiency in existing deliveries, or to comply with the regulations of a certain area.

In connection with this latter factor, we were forced for a long time to modify many of our designs in order to meet the specifications of certain districts. It is particularly gratifying to be able to say that much of our recent designing has been in the opposite direction. Real improvements in design have been possible due to amendments that have been made to legal requirements.

Tank Truck Styling: Style as applied to tank trucks is little different, basically, from style as applied to other lines. There are extreme, modified and conventional designs. The extreme style, as illustrated by the ultra streamlined type sometimes referred to as the "scarab" mounting has not been adopted on the Coast to any great extent. The generally accepted style is a modified design of streamlining with a smooth skin, beaver type tail, and full skirting.

Style, as well as design and construction is frequently influenced by the type of service to which a unit is assigned. The full skirting may be modified for mountainous areas where a high road clearance is needed or may be omitted entirely when not required for compartments housing delivery equipment.

Regardless of the particular styling used, attention must be given to make the mounting interchangeable with other chassis. Useful life is generally shorter for the chassis and a tank assembly may acquire 2 or more chassis before being discarded. Material savings in capital expense and construction costs are being effected as a result of making our tank mountings interchangeable.

Unfortunately, full progress in this direction has been impeded by the failure of some of the truck manufacturers to adhere to the SAE standard chassis dimensions.

Types of Equipment: Various types of equipment have been developed to meet the different and varying demands for petroleum products. Starting with plain tanks, frequently circular in shape with faucets at the rear, can racks and barrel carriers were added on the sides, and a compartment box was installed on the rear. The first meters were located in extensions of the rear frame. Later, the outlets, meters and accessories were installed in full skirting on the sides of the truck. The development of smooth skins and a modified type of streamlining brings us up to date. Shapes range through rectangular, semi-rectangular, semi-elliptical and elliptical in cross section.

A light truck of 750 to 1,000 gal. capacity with space at the rear for barrels or packaged products is common for assignment in rural areas. The bulk tank may be permanently mounted or demountable tanks may be used where the relative volume of bulk and package goods vary from trip to trip. The demountable tank type is particularly adapted to the back country for servicing lumber mills, mines and large ranches. Pressure deliveries are frequently required in this service and many of these units are equipped with pump, meter and long hose.

Straight tank trucks from 1 to 3 thousand gallons capacity are assigned to city service where the requirement for bulk products is high.

The semi-trailer is rapidly increasing in popularity after a somewhat slow start 6 or 7 years ago. Having single tank capacity ranging up to 5,700 gal. the semi-trailer is well adapted to deliveries on routes where the maximum capacity of a truck is inadequate.

Truck and trailer combinations provide the greatest carrying capacity but are generally found in transport bulk hauling, the trailer being restricted with regard to service station deliveries.

Discuss Manifolding Problems

Compartment Manifolding: The manifolding of 2 or more tank compartments to a common meter developed numerous problems involving contamination. The inclusion of a power pump for pressure deliveries created additional troubles involving accuracy of measurement as well as increased possibility of contamination.

The desirability of manifolding compartments was occasioned by proposals of regulatory bodies which would, in effect, require a separate meter for each grade of product. Since the volume of the various grades of gasoline varied from trip to trip, this specification would result in the need for a separate meter for each compartment.

A satisfactory solution was developed after a series of somewhat lengthy conferences with representatives of the California State Department of Weights and Measures. The conclusions were drafted into an amendment to the State Gasoline and Oil Substitutions Act and were enacted by the 1939 Legislature.

The specifications recognize 2 operating conditions:

First: If a single grade of a product is carried in the manifolded compartments there is no question of contamination and ordinarily no question of accuracy of measurement, assuming the meter has been calibrated properly.

Second: Where different grades or brands of a single product are carried in the manifolded compartments and delivered through a common meter, a possibility of contamination exists. The extent depends upon the quantity retained in the common meter, accessory devices and piping. More than one product, i.e. gasoline, burner oil etc. are not to be carried at the same time in manifolded compartments. A selector valve is required with an interconnected device which shall clearly indicate the grade of product to be withdrawn.

It was recognized that large meters were generally installed on large trucks and assigned to a service making large deliveries, and that a small meter was commonly found on the smaller trucks in a service where smaller deliveries were the rule. Accordingly the larger meter could be permitted a greater retention quantity without involving contamination to an injurious extent.

The specifications provide that where the meter is designed for a 2 in. or smaller standard pipe size, the quantity contained within the meter and its accessory devices, on the discharge side of the selector valve, shall not exceed 3½ gal.; for a meter larger than 2 in. size the retention shall not exceed 5½ gal.

An amendment was enacted this year to cover a situation where this retention quantity exceeds 3½ gal. and is of a grade remaining from a previous delivery, different from that to be delivered. It is provided that a delivery of less than 51 gal. shall not be made without first clearing the meter and accessories of the different grade of product.

The foregoing limitations do not apply to a meter installation equipped with a pump and hose, but it is made mandatory that the pump and hose be cleared before a delivery is made of a different grade. The product thus cleared may be returned to its appropriate compartment by means of the pump.

Where a single grade is carried in the manifolded compartments, the retention limitations do not apply. It is simply required that the system be cleared whenever a change is made in the product carried.

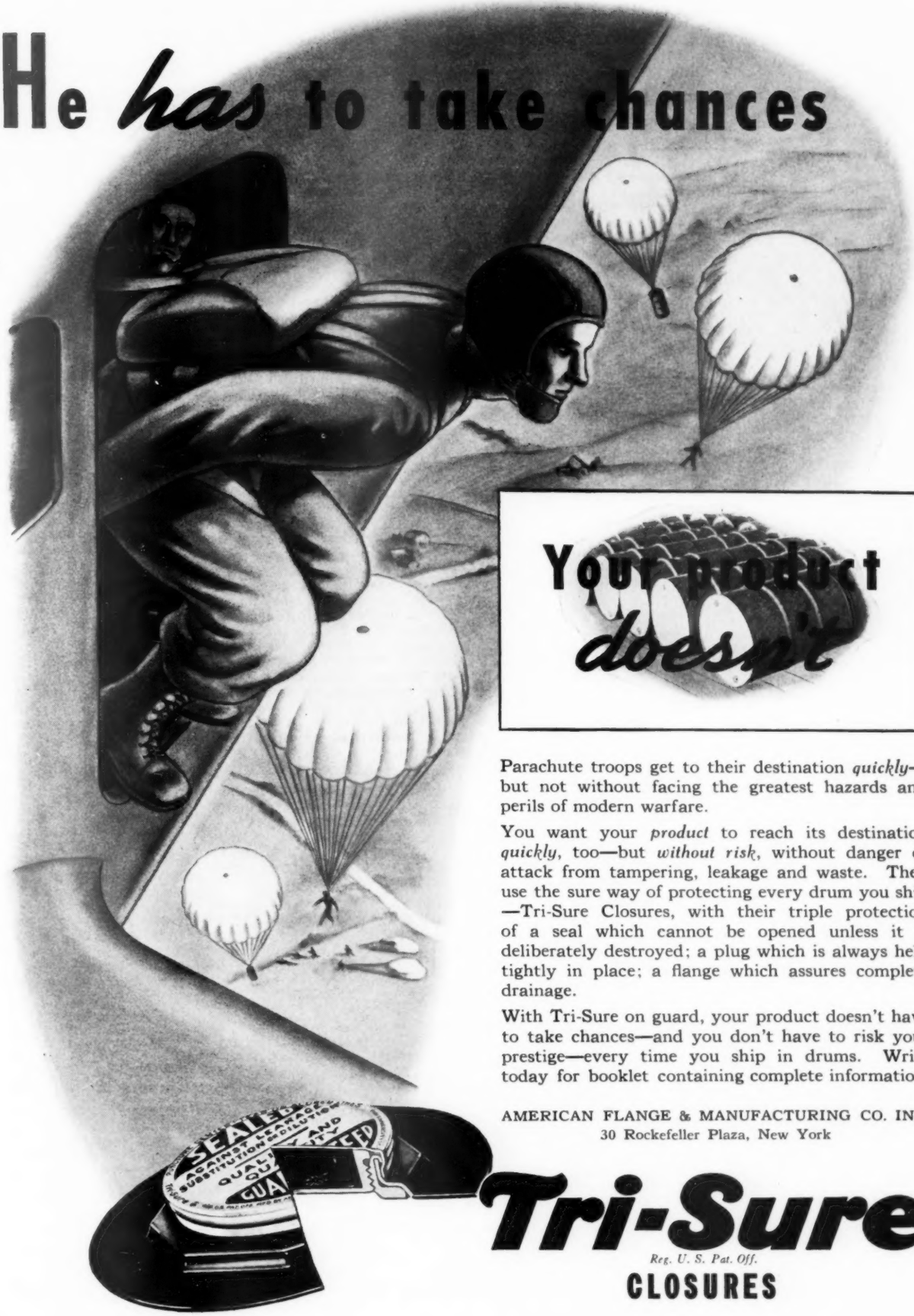
These specifications enforced by the State Weights and Measures Department have been a real contribution to the designing and construction of tank trucks. The benefit in delivery operations has been even greater.

The industry is compelled to market several grades of gasoline and other products. The volume of each varies from day to day and from trip to trip and the burden imposed upon tank truck drivers becomes increasingly complicated. Experience has shown that the specifications discussed have afforded a real relief to the already overburdened drivers and at the same time made possible real economies in the construction and operation of the equipment.

Regulations: Regulations governing the transportation of flammable liquids have a definite influence on the construction and operation of tank trucks. Unwarranted restrictive regulations retard the development of efficient designs. On the other hand, well conceived specifications encourage and make improvements possible.

Regulations originate from widely varied sources. Oil trucks are of course required to comply with specifications applicable to all types of trucks, enacted by federal, state, county and city agencies. The authority to establish additional regulations for trucks transporting flammable liquids is vested in federal and state bodies such as the Interstate Commerce Commission, State Industrial

He *has* to take chances



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CLOSURES

Accident Commission, Weights and Measures Departments, and also in local county and city boards and commissions.

Constant endeavor is made to maintain contacts with authorities to learn of any proposed regulations. It has been found that unwarranted restrictions are generally the result of over emphasis of possible fire hazards on the part of the authorities or from lack of sufficient knowledge and experience in the handling of petroleum products.

This very lack of knowledge and experience of local fire officials indicates there must have been a very favorable accident experience in tank truck operation, otherwise, many of these officials would be better informed. This experience is of course supported by the records of the National Fleet Safety Contests conducted by the National Safety Council in which the accident rate for petroleum trucks has consistently been under the average for all industries reported.

Our chief concern in this area has been with the numerous proposals to limit the maximum capacity of gasoline tank trucks and other physical specifications that would seriously affect the standardization of design and construction and interfere with the ready transferring of vehicles between areas.

As a result of consistent effort of interested operators, most of these proposals, as well as existing ordinances, have been amended, or are in the course of revision, to modify unwarranted specifications and at the same time offer more effective protection.

Experience has shown the importance of maintaining close contact with all regulatory bodies. Marked progress has been made during the past few years as the result of consistent endeavor. The frequency with which we are confronted with new proposals indicates that our work is not finished. It is doubtful if it ever will be completed. Many communities that have not been interested in tank truck regulations in the past are suddenly becoming concerned. The striking similarity of certain restrictive specifications indicates that the sudden interest is frequently the result of activities reported by neighboring areas. Herein lies the greatest danger in the enactment of this type of regulation, the precedent that is established for other communities.

States Ease Tank Truck Limitations

Substantial progress was made during the state legislative sessions this year. The service of the Pacific Coast Petroleum Industries Committee was invaluable in this connection. One particularly objectionable bottle neck was eliminated and more liberal size and weight regulations were enacted in other states. It is evident that there is a growing appreciation of the premise that petroleum trucks should not be subjected to special capacity and size limitations, but rather that they should be required to comply with the specifications applicable to all trucks regardless of the commodity carried.

Weights and Measures Specifications: Another development that, to the best of my knowledge, is limited to the Pacific Coast, pertains to the Weights and Measures Specifications for Vehicle Tanks as adopted by the California Bureau in 1938. Basically the Specifications are identical with those adopted by the National Conference on Weights and Measures. Optional Specifications that may be used in lieu of the National Code are provided in certain instances.

Fill Openings on tanks used as measures shall have a minimum effective diameter of 7⅝ in. if circular, or a minimum area of 45 sq. in. if other than circular, according to the National Code. This is a considerable improvement over the previous requirement for a 10-inch opening.

Optional minimum dimensions are provided in the California Act according to the size of the tank of compartment, four inch diameter if the compartment capacity is 100 gal. or less and 6 in. if between 100 and 800 gal 8 in. is specified where the capacity exceeds 800 gal. Equivalent areas are optional for openings other than circular.

The National Code provision was found impracticable for small auxiliary tanks and small compartments in the smaller sizes of truck tanks. The optional specification offers a much more workable arrangement.

Piping: The National Code requires that vehicle tanks used as measures and equipped with internal valves shall be calibrated to exclude the capacity of the piping. This is impractical and not generally acceptable as indicated by the March 1940 meeting of our committee, when a majority of the members present voted in favor of gauging truck tanks with the lines wet.

When a truck returns to a plant for reloading, with one or more compartments not completely emptied the lines would be wet and must first be emptied; otherwise the truck will go out loaded above the indicated capacity.

Internal valves are installed primarily as a safety measure in event of damage to the discharge piping. It is physically impossible to maintain them in leak proof condition. A compartment properly loaded to the marker, may be below the marker by the time delivery is to be made due to leakage into the piping. If the loading is checked by a customer, as is still being done at times, there is only one thing to do, drain the piping into a bucket and refill the compartment. The objection to this practice is based on the nuisance factor.

When a truck returns to a plant for reloading, with one or more compartments not completely emptied, the lines would be wet and must first be emptied. Here again is the nuisance factor.

Loading with dry piping actually requires the checking of all lines at each refilling operation to guard against uncalibrated retention. This can amount to several gallons in some cases and creates a practice unfair to the operator.

To correct this condition an optional provision was adopted in the State Specifications permitting the calibration of a compartment as not including the capacity of the piping. It is specified that the capacity marking required at the fill opening and discharge outlet indicate the method used.

Discharge Lines And Delivery Hose: The National Code requires a wet hose in a system designed for discharge by means of pump. To meet a problem of increasing deliveries into overhead storage, an optional section has been incorporated in the California Code, which permits the use of a dry discharge delivery hose provided the length does not exceed 20 feet. There are a number of conditions where a 20-ft. length of hose suffices to meet over-head deliveries, and where it is impractical to carry the hose wet.

These suggestions are presented here solely as conclusions that were enforced upon us. They are not offered as the final solution. This is simply an appeal for assistance in obtaining relief from vexatious problems.

The specifications just discussed have been presented and recommended to the National Conference on Weights and Measures by the Western delegate at their annual sessions in Washington D. C. for the past 2 years. No action has been taken however, due, as reported to us, to the fact that the Eastern Sealers have not been requested by any of the oil companies for modification of any of these sections. For that reason they were not interested in making any changes.

In the past the bulk of our equipment has been constructed in California shops and the local Sealer's approval has been accepted in the area in which the truck is placed in operation. Out of State construction is increasing however and this condition may not continue indefinitely. Some of the sealers in a number of our states have not, in the past, been very active but are becoming more energetic and the time may not be far distant when the code changes just discussed may become desirable in these states.

Certainly, conditions on the Pacific Coast can not be so widely at variance from those in other sections but that real benefit could be obtained from the adoption of similar specifications by the National Conference. It is extremely doubtful however, that such action will be taken unless proper presentation is made by the operators to their regional representatives.

The Manual Of Design Data For Truck Tank Discharge Systems developed as the results of a research project of the Wisconsin University Hydraulics Laboratory has been made available recently. We owe a deep debt of gratitude to the National Truck Tank Assn. for sponsoring the project and for publishing the results.

The Manual is replete with tables and charts showing the hydraulic flow characteristics of equipment and fittings included in a truck tank discharge system. The data should be extremely valuable to engineers engaged in designing truck tank systems. It is hoped the project can be continued to include additional meters and accessories in current use.

The National Truck Tank Assn. is to be commended for a real contribution towards the solution of one of our most vexatious problems.

Any discussion of tank truck developments would be incomplete without mention of the help we have had from the manufacturers of tanks, chassis, meters, air eliminators and the many other appliances that go into the construction of delivery trucks. We are indebted to the National Truck Tank Association for the excellent work they have performed. It is regretted that it has not been practicable for the manufacturers on the Pacific Coast to take a larger part in these national activities. Supplying the Coast exclusively, they have more than had their hands full in meeting their local problems. Almost without exception these manufacturers have co-operated, and at times, have taken the lead in development work. Many have made expenditures in time and money that although difficult to justify at the time, are certain to return dividends.

Future: A discussion of developments raises the question, what of the future. Improvements in design and construction to provide more efficient and more economical deliveries, and improvements as a result of well conceived regulations have been mentioned. Our efforts, for the immediate future at least, will be largely devoted to overcoming mechanical deficiencies of delivery equipment and accessories. I will not go into detailed list of complaints. The manufacturers as well as ourselves are fully conversant with our problems.

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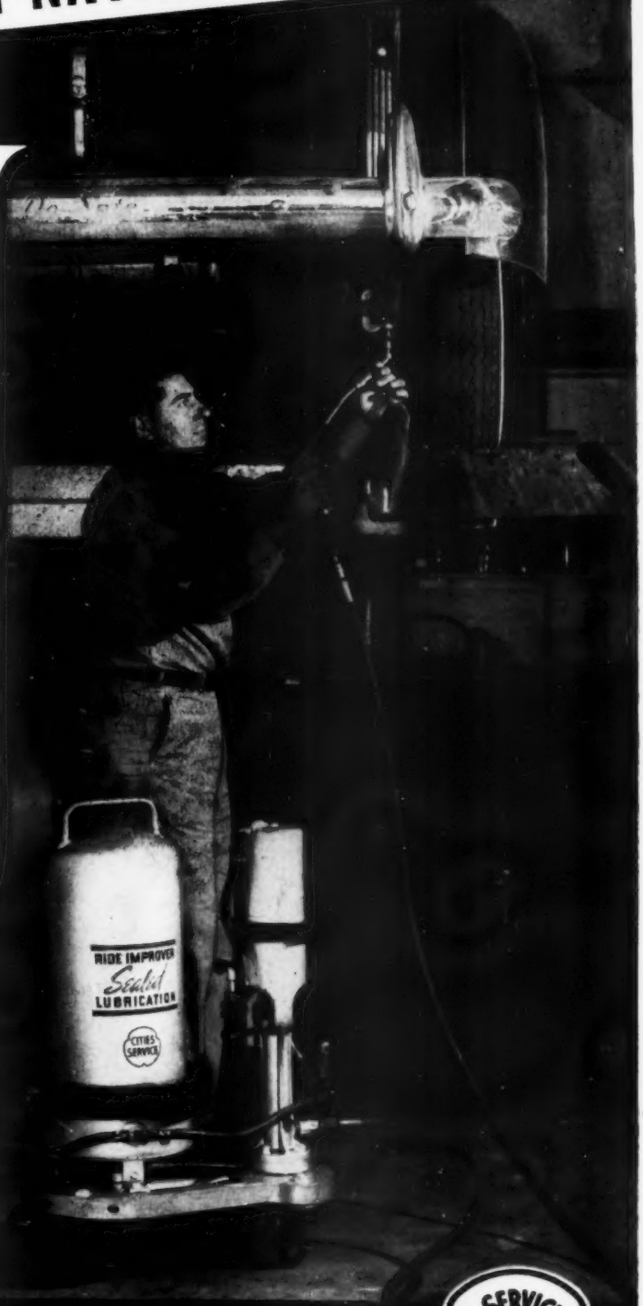

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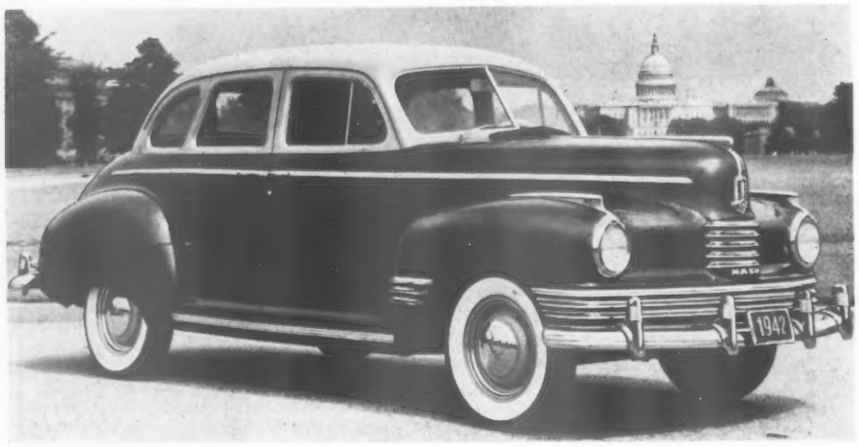

1942 NASH

SUMMARY

- There are few changes in the 1942 models affecting servicing and lubrication.
- There are some changes in capacities, but the recommended list of lubricants, oil change periods remain the same in most cases.
- In the Ambassador '600' some of the specifications given by the company of interest are: Iso-thermal fuel system; downdraft carburetor; double automatic spark control; steel-strut aluminum pistons; four main bearing, full counterweighted crankshaft dynamically balanced by radio; full pressure engine lubrication.

Capacities

Model	Ambassador 600	Ambassador 6	Ambassador 8
Radiator, qts. (The Nash heater capacity is 1 qt.)	14	17	16
Fuel tank, gal.	20	20	20
Crankcase, qts.	5	6	7
Transmission, pts.	1	4	4
Trans. and O.D. oil capacity	3	6	6
Differential	3	4	4

Changes:

The cooling system on the 1941 models was 15 qts. on the Ambassador 600; 18 qts. on the Ambassador 6; and 17 qts. on the Ambassador 8, which included 1 qt. with the weather eye.

The transmission capacity on the 1941 models was 3½ pts. on the Ambassador 6, and 3½ on the Ambassador 8. Capacities of 1941 and 1942 models are the same with overdrive.

The rear axle lubricant capacity on the Ambassador 8 is changed from 5 pts. in 1941, to 4 pts. in 1942 models.

Oil and Grease Recommendations

MOTOR OIL:

The company recommends use of SAE 20 motor oil for general summer, spring and fall driving; SAE 10 for general winter driving and SAE 10, plus 10% kerosine for extreme cold weather only.

Change Periods:

Nash engineers recommend a complete change of oil, during break-in period, at the end of the first 1000 miles, and as often thereafter as it becomes contaminated with foreign matter, but not to exceed 2000 miles. They state that adverse road and driving conditions and winter operation may require more frequent draining and refilling.

GEAR LUBRICANTS:

Transmission and overdrive:

The company recommends SAE 70 for summer, SAE 50 for winter, or SAE 90 Bright stock gear oil for year-round use. They caution *not to use oil of extreme pressure type.* They state: Dilute for extreme low temperatures with light engine oil.

Change period:

Company recommends flushing and change twice a year or every 10,000 miles.

Differential lubricant:

SAE 90 Hypoid recommended for summer and winter. The company recommends that when hypoid gear lubricant is changed, the rear axle be flushed. They caution to use only flushing oil—not gasoline, kerosine, steam or other substitutes. They state that it is advisable to check the level of the rear axle lubricant every 2000 miles, and if the level has dropped due to leakage, change the lubricant completely; never add or mix one brand of lubricant with another.

Change period:

The change period recommended is once a year or every 10,000 miles. (*Same change period for* 1941 *models*).

Accessories to Be Sold or Serviced

OIL FILTER:

The oil filter on both the Ambassador 6 and 8 engines is located on the right side of the engine. The company states that the cleansing ability of the filter is ineffective after 8000 miles. They recommend that at that time it be renewed and one quart of oil added to the regular capacity when the filter is replaced.

On the 600 models, the oil filter is an accessory item.

AIR CLEANER:

The company states that air cleaners of the standard production type which are used in cities and territories free from dust, should be cleaned and oiled every 2,000 miles. They recommend cleaning with gasoline, allowing to dry, reoiling with engine oil, draining off excess oil and reassembling.

They state that oil bath type air cleaners should be used in those territories that are dusty. They recommend checking periodically to maintain proper efficiency. To clean, remove filter element, wash with gasoline,

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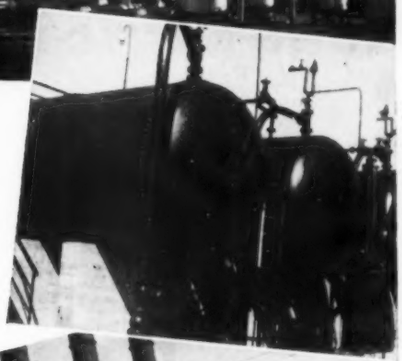

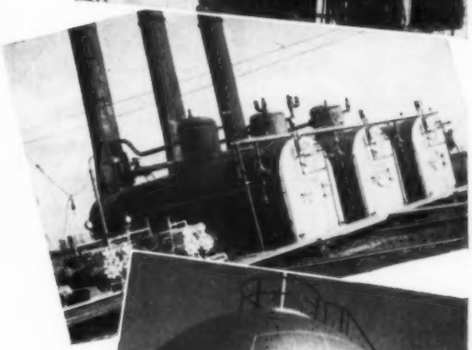

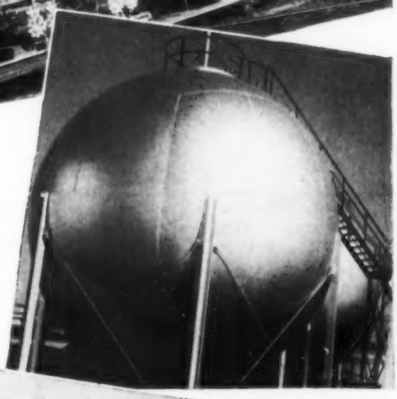

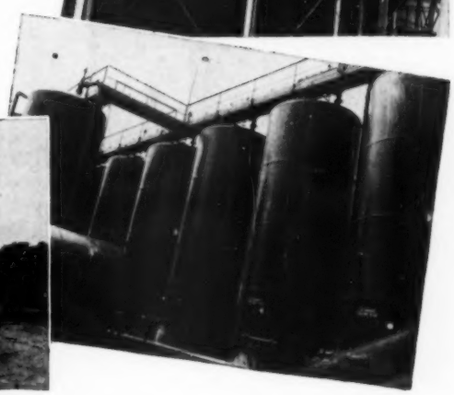

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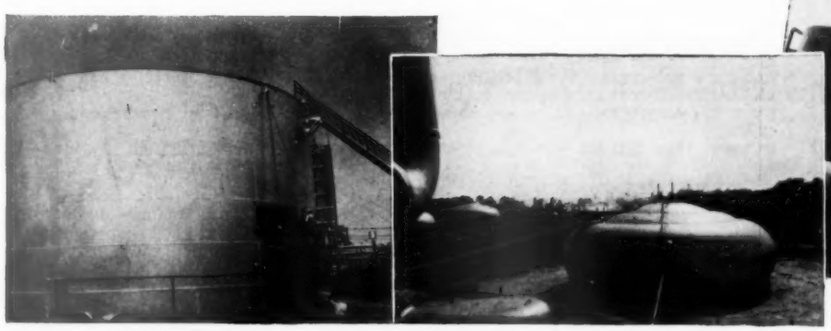

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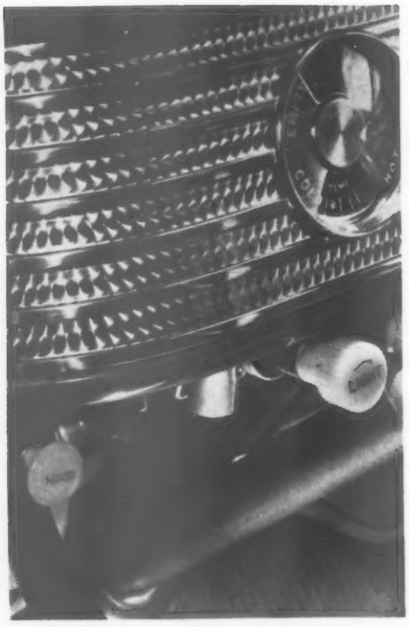


Knob on the extreme left of the instrument panel opens the hood

clean oil base and refill to indicated level.

TIRE PRESSURES AND SIZES:

	Ambassador 600	Ambassador 6	Ambassador 8
Tire size—standard	16 x 5.50	16 x 6.25	16 x 6.50
Tire pressure—standard	28 lbs.	28 lbs.	26 lbs.
Tire optional oversize	16 x 6.00	16 x 6.50	No option
Tire pressure oversize	25 lbs.	26 lbs.	No option

Company cautions against under and over-inflation as a tire conservation measure. They recommend occasional front wheel checking for alignment.

LIGHT BULB SIZES:

	Mazda Number
Headlight—Sealed beam	No. 4030
Stop and taillight	1154
Dash	55
Indicator	51
Tail	63
License	63
Clock, headlight, pilot, ignition switch and instrument panel lights	55
Dome light	81

General Servicing Data

HOW TO GET UNDER THE HOOD:
Controlled by knob on extreme left of instrument panel.

TYPE SHOCK ABSORBER:
Delco, direct double action.

SPARK PLUGS:

	Ambassador 600 14 m/m Auto-Lite 7	Ambassador 6 14 m/m A.C. 45	Ambassador 8 14 m/m A.C. 45
Spark plug	Gap .025"	Gap .025"	Gap .025"
Breaker points	Gap .020"	Gap .020"	Gap .017"

FUSES:
Fuses of 30 amp. capacity are inserted in the electrical circuit. They are mounted in a fuse block located under the hood on the left front side of the body.

BATTERY:
Located under front seat, 6-8 volts. On 600 model, 90 amp. hours, and 110 amp. hours on 6 and 8 models.

TRADEMARKS

The following are trademark applications pertinent to our field pending in the United States Patent Office which have been passed for publication and are in line for early registration unless opposition is filed promptly. For further information address National Trade-Mark Company, Munsey Building, Washington, D. C., trademark specialists.

VAPO-TONE, Ser. No. 446,987, California Spray-Chemical Corp., Wilmington, Del., and Richmond, Calif. Filed: September 12, 1941. For parasiticides. Published: October 28, 1941.

VIRGIN, Ser. No. 444,490, John A. Casey Company, Inc., New York, N. Y. Filed: June 13, 1941. For oils and greases for fuel and lubrication. Published: October 28, 1941.

TOPSALL, Ser. No. 445,216, Topsall Lubricants, Inc., Tonawanda and North Tonawanda, New York. Filed: July 9, 1941. For motor and industrial lubricating oils and greases. Published: October 28, 1941.

GLOTONE — CARBON TREATED — THE PERFECT FURNACE OIL — THE RED COLOR IDENTIFIES IT! (All wording disclaimed except GLOTONE.) Ser. No. 446,146, I. L. Schurman, Chicago, Ill. Filed: August 11, 1941. For fuel and heating oils. Published: October 28, 1941.

New York Oil Heating Group Announces Expansion

NEW YORK, Nov. 10.—Active expansion into all counties throughout the Metropolitan area is announced here by the New York Oil Heating Assn. Inc. A chairman and committee for each county has been appointed. Aim of the group is to help correct operations detrimental to the general welfare of the industry.

Periodic Inspection Recommended by the Manufacturer

DAILY: Check oil level, or on long trips with every filling of gasoline tank. Inspect level of water in radiator.

WEEKLY: Check tires to recommended pressure.

EVERY TWO WEEKS: Check battery and add distilled water as needed.

EVERY 6 MONTHS: Flush cooling system and treat with rust resisting compound, unless anti-freeze compound contains inhibitor.

EVERY 1000 MILES: Lubricate entire chassis. Check level of fluid in brake master cylinder.

EVERY 2000 MILES (Oftener under adverse conditions): Change engine oil. Lubricate water pump. Re-oil standard type air cleaner. Check transmission lubricant—add to correct level. Check rear axle lubricant—if not up to proper level, flush, and change.

EVERY 5000 MILES: Clean fuel screens, spark plugs, clean and set distributor points, check and set timing. Adjust fan belt. Lubricate starter and generator bearings. Re-oil heavy duty type air cleaner on carburetor. On Ambassador 600 lubricate propeller shaft.

EVERY 8000 MILES: Renew oil cleaner—if so equipped.

EVERY 10,000 MILES OR TWICE A YEAR: Lubricate wheel bearings. Flush transmission and rear axle and refill with new lubricant. Renew spark plugs for maximum performance.

★ In trucks, too
★ There's something NEW for '42!
★ It's TIMKEN "EASY-SHIFT"

Yours for Easy Shifting

"Easy-Shift" is a new, thoroughly tested and road-proved development in Timken 2-Speed Double Reduction Drive Axles. Timken "Easy-Shift" not only makes shifting unbelievably easy for manual control but makes it possible, for the first time, for truck manufacturers to offer remote control power shifting—vacuum, compressed air or mechanical!

"Easy-Shift" results in the elimination of speed loss in shifting on upgrades, does away with shock load from sudden clutch engagement, and materially adds to all-around truck driving ease. Simple in principle—it permits instantaneous engagement of the shift collar with the desired pinion at synchronized speeds.

Watch for truck manufacturers' announcements of power shifting in connection with Timken "Easy-Shift" on new 2-Speed models for '42! Ask your truck dealer, then specify Timken 2-Speed Double Reduction Axles with "Easy-Shift" when you buy! They're yours for Easy Shifting!

THE TIMKEN-DETROIT AXLE COMPANY, DETROIT, MICHIGAN
WISCONSIN AXLE DIVISION, OSHKOSH, WISCONSIN

TIMKEN
EASY-SHIFT

DOUBLE REDUCTION DRIVE
2-SPEED

MERCHANDISING

This is a readers' forum on merchandising of petroleum products, automotive accessories and allied lines. Let us have your ideas on how to improve selling at stations. Address: Merchandising Editor, NATIONAL PETROLEUM NEWS.

People outside of the oil business upon delving into the retail distribution plan of oil companies, both that of the major companies and Independent jobbers, must look on it as an incredible kind of business when they first start a study of its operations.

In trying to compare it with other lines of retailing, they probably find that there is nothing to compare, until they get to the actual selling. Then they find that, as a whole, the average retail station operator, as an all around salesman, tops by several points the salesman they are comparing him with.

NATIONAL PETROLEUM NEWS, in presenting to manufacturers and others not in the oil business facts about oil company operations—both major companies and Independent jobbers—finds that what is apparently trite to the oil industry is apparently not known to the outsider.

Instances have been found where companies desirous of selling their products through oil outlets, wasted their own time and money, as well as that of station operators themselves, by attempting to sell the item direct to the station man, rather than the company owning the station and the equipment in it, or enlisting the aid of the company whose brands are distributed at that station

Close Relationship Exists

A point not clear to some manufacturers' representatives is the relation between the jobber and the station manager. They realize that the jobber or the oil company is the station operator's landlord, but what many of them do not realize is—

That an oil company landlord, unlike the landlord of the druggist or grocer, has a direct financial investment in many cases running into tens of thousands of dollars in the property, including equipment;

That because he calls on the station frequently, a close relationship exists between the supplier and station operator, not true with other retail operations.

That the operator looks to his supplier for advice, training, management and supervising functions;

That generally purchases made by the operator if not made from the supplier's own stock is often made only after the nod of approval or recommendation of the supplier.

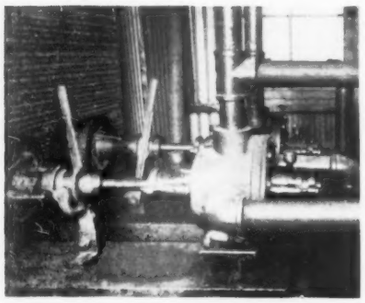
NPN in making presentation of these and other facts to manufacturers has found that one way to present the facts is by comparison of the operation of an independent grocer or druggist, for instance, and the retail gasoline station.

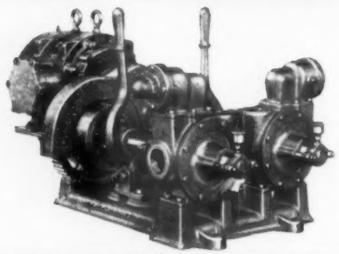
Perhaps some of the comparisons might be of interest to jobbers, or their companions of the major oil companies. Some of the thoughts might be passed on to retail operators, who may not have considered their relative position compared with the druggist, grocer or other retailers. Here are some extracts from one presentation made to a manufacturer considering the possibilities of selling through oil company outlets:

"The druggist can be, and most of the time is, a customer for many different wholesaling concerns and manufacturers. Besides buying many brands of the same class of merchandise from different sources, he buys different kinds of merchandise from many sources. He may buy from 50 or more suppliers.

Station Buys from Supplier

"On the other hand, the retail service station buys the most, or even all, of its inventory from its gasoline supplier. In many cases the gasoline supplier is also the source of supply for such additional merchandise as tires,





TRANSPORT HAULERS

The new Blackmer 200 GPM Truck Pump saves you valuable time at terminals. Investigate it.
(Other sizes 50 and 100 GPM)

★ ★ ★
VETERANS OF WORLD WAR I
★ ★ ★

BLACKMER
·ROTARY·
PUMPS

Installed in 1918 AND STILL RUNNING in a major oil company's bulk plant in Ohio.

THE PUMP THAT IS SELF-ADJUSTING FOR WEAR
FAMOUS BUCKET DESIGN

THIS NEW BLACKMER DUPLEX UNIT gives you even greater efficiency, PLUS the low maintenance cost and long life that makes Blackmer standard pumping equipment in bulk plants, blending plants and terminals, the world over. Capacity 50 to 700 GPM per pump. All standard drives.

LET BLACKMER UNITS CUT YOUR PUMPING COSTS.

Write for special bulletins today

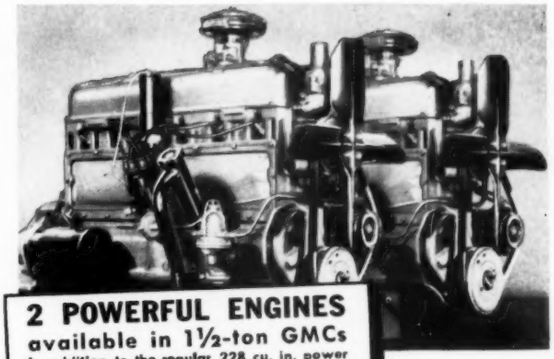
BLACKMER PUMP COMPANY

18811 Century Avenue, S. W. Grand Rapids, Michigan

POWERED *to Save You Money*

General Motors Trucks give you the strongest-pulling engines in the industry, size for size. They save you time on the road, because GMCs accelerate quicker and climb hills faster! They save you gas, because GMC Super-Duty Engines actually get more power out of every drop of fuel! And GMCs save on repair bills, because GMC engineering gives you power and stamina to handle tougher jobs easier!

Our own YMAC Time Payment Plan assures you of lowest available rates



2 POWERFUL ENGINES
available in 1½-ton GMCs
In addition to the regular 228 cu. in. power plant, a *stronger* 236 cu. in. Torque-King Engine that delivers 192.5 ft.-lbs. maximum torque now is available in all 1½-ton GMCs

THE TRUCK OF VALUE

GMC TRUCKS

GASOLINE — DIESEL

PROOF
THAT IT
PAYS TO
MODERNIZE

Gleaming porcelain enamel in your characteristic color combination, can be applied to your present buildings . . . result . . . increased business at the pumps . . . in the lubritorium.

THE Erie ENAMELING COMPANY
ERIE, PENNSYLVANIA

DESIGNED TO SAVE *YOU* MONEY!

Roper Truck pumps will save you money and step-up your profits by increasing the efficiency of your delivery fleet . . . enabling you to dispense more gallonage per hour . . . making possible more deliveries per day. Despite their greater speed, Ropers are extremely quiet in operation. Roper simplicity of design . . . only 2 moving parts . . . assures smooth performance and longer life. Easy to install . . . quick to start . . . easy to service.

Only Roper has all of these features:

Only 2 moving parts . . . equal size pumping gears . . . extra large bronze bearings . . . self-lubricating . . . larger capacity with lower power consumption . . . extremely quiet . . . compact design . . . always primed . . . good suction . . . leak-proof stuffing box . . . new sleeve type relief valve . . . easily installed in less time . . . fully guaranteed.

Write for Bulletin N278.

GEORGE D. ROPER CORP. ROCKFORD ILLINOIS

ROPER TRUCK PUMPS

batteries, specialties, etc. The more diversified service station may have accessory items in stock, which are not wholesaled by the gasoline supplier, but these are purchased from few other sources.

"Buying accessories from this gasoline supplier creates, again, a closer bond between the retail service station and the gasoline supplier.

"Where the druggist is on the defensive when the hundred-and-one salesmen call to stock him up, the gasoline retailer greets the oil company salesman as his friend and counseler. The retailer knows that if the salesman loads him up with too much oil this month, that the salesman will not be able to get cash or credit approval for specialties, accessories, or whatever is being pushed the next month.

Supplier Directs Selling

"The gasoline supplier—as the only or the biggest supplier of all merchandise to the station—acts in the capacity of sales supervisor, management counsel, and merchandising director for the station. He becomes the directing force that determines the kind of selling job the station will do on any item."

In telling the operations of Independent oil jobbers and major companies, comparison is often made between the oil business and that of other products. For instance, the difference in the selling of soft drinks and gasoline, was used in one such comparison. Here are a few extracts from the comparison:

". . . . , whose product is sold in all kinds of stores and under all kinds of conditions, and in direct competition with many other brands at an individual store, need not worry too much if a single drug store, or one tavern, or one hotel, or one service station no longer stocks or sells it. There are dozens of other places in the immediate vicinity of that one store where the buyer of this product can pause for refreshment.

"On the other hand, a gasoline supplier has his brand of gasoline and oil at a retail station. Usually there is no other brand of gasoline sold at that station. There is no other service station within a half-mile, a mile, or even 4 or 5 miles, selling the same brand of gasoline furnished by the same supplier.

"If the station becomes unprofitable, or if the station loses business, or if the station is switched over to some other brand of gasoline, the loss of business may be irretrievable.

"If the station is allowed to run down, due to poor management, to a point where it cannot be made profitable again, the gasoline supplier cannot remove the signs, the floodlights, the gasoline pumps, the lubrication equipment, and rent the building to a butcher or a grocer or a druggist. The service station is fitted to only kind of business. It is not like a bankrupt bank that can be turned into a tavern or lunch room, with a few changes in the fixtures."

Problem in Packaging

WHAT would you do if just when you were taking life easy at the ripe old age of 600 years, someone handed you a tough packaging problem to solve? It happened to Noah.

He was assigned to build the Ark. No easy job. It had to hold two of every living thing. It had to be sturdy enough to stand 40 days and 40 nights of rain. It had to be just the right shape and size.

And Noah came through.

Many manufacturers have been faced with packaging problems very like Noah's. They needed new packages that would completely protect their products. Packages of a certain shape and size that would be economical to fill, pack, and ship. They needed old packages re-designed.

And Continental came through.

We've been helping businessmen solve packaging problems for 36 years. We've been asked: "How can I cut down my shipping costs?" "How can I speed up my packaging operations?" "How can I keep air out of my container?" "How can I make it more attractive?"

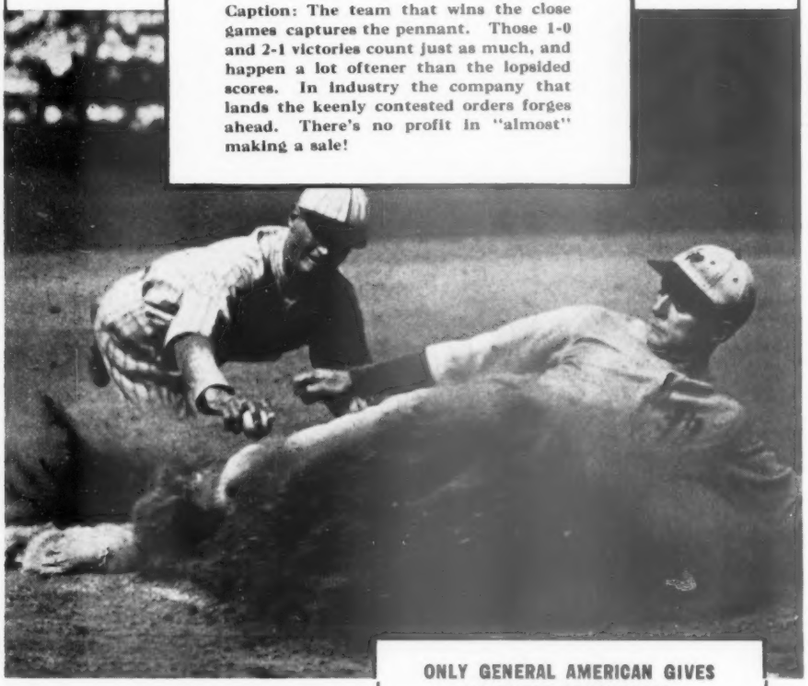
Through our complete packaging service—our research laboratories, our design and development experts—we've been able to answer these and thousands of other questions ranging from construction to marketing.

Do you want a packaging service that recognizes the *combined* importance of cost, display, protection, convenience? Then call for Continental. We'll be glad to help.

CONTINENTAL CAN COMPANY

New York Chicago San Francisco Montreal Toronto Havana

Getting the close ones!



Caption: The team that wins the close games captures the pennant. Those 1-0 and 2-1 victories count just as much, and happen a lot oftener than the lopsided scores. In industry the company that lands the keenly contested orders forges ahead. There's no profit in "almost" making a sale!

When a sale depends on rush delivery, you'll be glad your product is stored with General American. At each of our strategically located terminals, day and night crews are ready to dispatch tankers and trainloads—*fast*. Meanwhile you can know that your bulk liquids are getting the most modern fire-safe, efficient, contamination-p r o o f storage in the world. Terminate your shipping worries, with the 7 exclusive benefits of General American Terminal Service.

ONLY GENERAL AMERICAN GIVES ALL THESE ADVANTAGES:

1. NO CONTAMINATION. Separate pumps, lines, storage zones for dissimilar commodities.
2. MODERN PROTECTION. Latest safety appliances; lowest insurance rates, minimum evaporation losses.
3. RELIABLE CUSTODIANSHIP. Our warehouse receipts are highest type of collateral everywhere.
4. INDEPENDENT OWNERSHIP. Strictest privacy; we do not buy, sell or refine any commodities.
5. NO WHARFAGE. There is no wharfage charge at our own private docks.
6. SPEED WITH SAFETY. Day and night crews complete facilities, eliminate all shipping delays.
7. WORLD'S LARGEST TANK CAR FLEET. One car or hundreds, wherever and whenever needed.

GATX GENERAL AMERICAN

Strategically located to serve you!

GENERAL AMERICAN TANK STORAGE TERMINALS

Goodhope, La. and Westwego, La., (Port of New Orleans)
Corpus Christi, Texas
Carteret, N. J. (Port of New York) Galena Park, Texas (Port of Houston)

A DIVISION OF GENERAL AMERICAN TRANSPORTATION CORPORATION

Equipment Personals

William B. Johnson, Jr., for the past 4 years assistant to the sales manager of Erie Meter Systems, Inc., has been appointed manager of sales following the death of **Harry S. Pell,** according to announcement by **N. A. Carlson,** vice-president and general manager. Mr. Johnson is a native Kentuckian and graduate from Kentucky Wesleyan University. He has been identified with Erie Meter Systems since August, 1928.

* * *

C. E. "Red" Weaver has been named manager of Globe Hoist Co.'s industrial division, **F. W. Swanson,** president of the firm, has announced. Mr. Weaver will manage engineering as well as sales of Globe's line of hydraulic and mechanical lifts and elevators at both the Philadelphia and Des Moines plants. Widely known throughout the automotive and industrial field, Mr. Weaver for the past 3 years was connected with Service Station Equipment Co., Muskegon, Mich. He returns to Globe where, previously, for 5 years he served as assistant to the vice-president in charge of sales.

* * *

Three executives of Pittsburgh Equitable Meter Co. have recently been called for active military duty in different branches of the service. Col. **W. F. Rockwell,** president of the company, was called into service early in October, reporting to Washington where he has been serving as assistant to the Chief of the Motor Transport Division. Capt. **A. E. Higgins,** vice-president of the company, originally called in mid-summer for active duty in the Air Corps, has been temporarily deferred due to defense activities of the Pittsburgh company. For the past 8 months, Capt. **J. R. Sproat** of the sales staff has been serving with the 176th Field Artillery in command of Battery "F" at Fort Meade.

The National Meter Division of Pittsburgh Equitable Meter Co. recently moved into larger offices at 708 Beacon St., Boston, where New England sales and service are under the direction of **Eben P. Lufkin,** district manager. West Coast divisional sales headquarters of Merco Nordstrom Valve Co. and Pittsburgh Equitable has moved to a new building at 3136 East Eleventh St.

* * *

T. W. Myers, formerly assistant manager of sales, has been appointed sales manager of Service Station Equipment Co., Muskegon, Mich., following resignation of C. E. Weaver.

* * *

Walter C. Leitch, sales manager of Gilbert & Barker Manufacturing Co., has taken over oil heating air conditioning equipment as a part of his management activities.

MARKETS

Mid-Western

CHICAGO, Nov. 8.—Gasoline demand continued to "ease off" with volume of offerings increasing, according to most refiners and tank car marketers in Chicago. Demand for fuel oils was reported "brisk", with shipments against contracts "heavy". Quotations for all products were unchanged.

Open spot sales reported by 4 marketers during the week were: 14 cars 80-82 oct. Ethyl at 6.5c; 10 cars 72-74 oct. at 5.875c; 12 cars 60 oct. & below, 2 cars at 5.125c, and 10 cars at 5.25c; 10 cars 41-43 kerosine at 3.875c; 1 car range oil at 3.875c; 2 cars No. 2 straw fuel at 3.625c; and 1 car No. 3 fuel at 3.375c, FOB Group 3.

One refiner quoted 7.4c for 80-82 oct., and refiners quotations ranged 6 to 6.375c for 72-74 oct., 5.2 to 5.625c for 60 oct. & below, 4.375 to 4.75c for 41-43 kerosine, 3.6 to 3.8c for No. 2 straw, 3.5 to 3.7c for No. 3 fuel, and 4 to 4.2c for range oil, FOB Group 3.

Marketers Group 3 quotations ranged 6.125 to 6.5c, 5.625 to 5.875c, 5.125 to 5.25c, 3.75 to 4c, 3.375 to 3.625c, 3.375 to 3.5c, and 3.75 to 4c, for the 7 products, respectively.

Gulf

NEW YORK, Nov. 8.—Activity at the Gulf the past week centered on No. 2 fuel, with inquiries for November cargoes and sales for December at 3.75 and 4c reported.

Sale reported at 3.75c was of 80,000 bbls. No. 2 for first-half-of-December lifting, coastwise, and was followed by two sales at 4c, one of 80,000 bbls. and one of 120,000 bbls., for December lifting, coastwise.

Four inquiries for cargoes of 75-80,000 bbls. No. 2 fuel were reported for November lifting, coastwise, with quotations at the end of the week ranging from 4 to 4.25c.

Sale of 80,000 bbls. of 74-76 oct. (ASTM) 400 e. p. leaded gasoline at 6.5c also was reported, with lifting designated for late November to early December, coastwise. Two gasoline inquiries were reported during the week, for "cargoes" of 76 oct. (CFR) for December and 81 oct. (research) for November lifting, coastwise. Min. 80 oct. (research) grade was said to be unavailable under 6.75c.

Two inquiries were reported for 80,000-bbl. cargoes of 48 d. i. gas oil, one for late November, one for early December lifting, coastwise. Quotations for 48-52 d.i. ranged from 4.125 to 4.25c.

Pennsylvania

CLEVELAND, Nov. 8.—Fuel oils were priced 0.125 to 0.25c lower in Western Penna. the past week, and gasoline was down 0.25c in the lower field. Other products were unchanged.

Sales of No. 2 fuel oil were reported from the lower field at 5.625c and 5.75c, with quotations for all grades off 0.25c. No. 1 ranged from 5.75 to 6c; No. 2, 5.625 to 6.25c; No. 3, 5.625 to 6c; and 36-40 gravity, 5.5 to 6c. In the upper field, No. 1 ranged from 6.125 to 6.25c, and other grades 6 to 6.25c. At these levels, prices were said to meet competition of Illinois and Michigan fuels, and some sources said they expected the market to "steady".

Reduced quotations for gasoline were reported by 3 lower field refiners, with prices for 74-76 oct. (ASTM) and (L-3), ranging upward from 7c. There were unconfirmed reports late in the week that 7c was being shaded.

Bright stock and dark stocks were reported "quiet". Neutrals continued "tight". Sales of 200 vis. neutrals were "still being made at 33c with something tied into it" and "up to 42c with no strings," according to one source.

California

LOS ANGELES, Nov. 8.—Rack prices of third grade gasoline were reduced 0.25c to 0.5c the past week at a number of small Independent refineries in the Los Angeles Basin, according to reports here. Sales of unbranded gasoline were said to have been made at around 4.25c.

Some of these sales were for shipment to points outside the state and normally supplied by Group 3 refineries. A majority of Independent plants in the Basin were, however, quoting 0.5c to 1c above this price.

Further strength in fuel oil prices resulted from the closing down or part time operation of small refineries in the Basin area that had no cracking facilities. Heavy fuel oil ranged from $0.75 to $0.80 per bbl. at Independent plants in the Basin, with $0.80 the low at San Joaquin Valley refineries.

No changes were reported in quotations for cargoes of gasoline for export.

Mid-Continent

TULSA, Nov. 8.—Quotations for refined products were generally unchanged in the Mid-Continent the past week. Burning oil shipments against contracts were picking up, although most refiners said movement was "not brisk". Gasoline shipments northward against contracts continued good with volume at or above last year. Wax demand was "a little weak, but correcting itself," with 131-133 A.m.p. quoted 0.375c lower by one refiner at 6c.

Oklahoma refiner sold 3 cars 72-74 oct. gasoline at 6c and 2 cars 80-82 oct. Ethyl at "1c over 72-74 price." North Texas refiner sold 3 cars 72-74 oct. at 6.3c, said 60 oct. & below moving "slow", adding he was "shipping 5-6 cars 72-74 to every car 60 & below".

Inquiry for 6,000,000 gals. of solvent and conventional processed lubes was reported for delivery over 1942. Demand for neutral was better than for bright, some sources said.

Demand for heavy fuel, No. 6, was good. Oklahoma refiner who had been quoting 80c for No. 6 withdrew from market, said his entire output was under contract for November with price based on crude oil price. One other refiner quoted 90c for No. 6.

Atlantic Coast

NEW YORK, Nov. 8.—Advances in gasoline quotations were reported by suppliers at South Atlantic points the week ended Nov. 8. Prices for 68-70 oct. (ASTM) were 0.5c higher at Savannah, Jacksonville, Miami, and Tampa at 7.6 to 7.8c; at Mobile and Pensacola at 7.1 to 7.3c. Min. 80 oct. (research) also was up 0.5c at Savannah, Jacksonville, and Miami, at 7.87 to 8.2c; Pensacola 7.5 to 7.7c; Mobile 7.37 to 7.7c. At Tampa, min. 80 oct. was priced 0.38c higher at 7.75c.

Some suppliers said call for gasoline had been lighter since the lifting of restrictions on its sale, but others said demand continued good.

Demand for kerosine and heating oils was described as "slack" by most suppliers, with jobber storage said to be full as warm weather continued. At Jacksonville, kerosine was priced 0.25c higher at 5.25 to 5.5c. Reports of offerings at New York of kerosine and No. 2 fuel "under the market" could not be confirmed.

No let-up in demand for heavy oils was reported, with supplies closely held and sales generally limited to regular customers.

REFINERY and SEABOARD PRICES

In bulk lots by Motor Transport, Tank Car, Barge or Tanker as shown

(NOTE—Parenthetical figures after prices indicate number of companies quoting when less than three companies are quoting.)

HOW PRICES ARE REPORTED—

Refinery and Seaboard prices in National Petroleum News are gathered by PLATT'S OILGRAM and are as published in the Monday issue of the OILGRAM.

PLATT'S OILGRAM is a reporting service issued in three identical editions daily from News Bureaus at New York, Cleveland, and Tulsa, Okla. PLATT'S OILGRAM gathers and publishes what its publisher and representatives believe to be accurate news of sales, prices and current happenings affecting the oil industry and that will be of interest to its subscribers. As this information is usually private, OILGRAM reports it according to what it is able to obtain from sources deemed reliable.

All information is supplied without guarantee as to its completeness, accuracy time of transmission or promptness of delivery.

The subscriber receives this information for his private use and not for resale or further distribution.

Publisher reserves the right to change the extent, nature and form of showing this information at any time.

Prices shown in the tables are quotations (meaning sellers' general offers or posted prices), or actual sales prices, reported to OILGRAM by refiners for "open spot" transactions, except as otherwise specified.

Prices arrived at by discounts off a specified price or "market date of shipment," prices named in contracts or prices arrived at in accordance with any arrangement made prior to date of sale, are not for "open spot" transactions and therefore are not considered in making the price tables. Prices made to brokers and prices in "Inter-refinery" transactions are also not considered except as may be noted.

All prices are for "immediate" shipment except in Gulf Coast bulk transactions where shipment is generally to be made in ninety days. Prices are FOB refineries, pipelines, or tanker terminals in districts designated.

Prices shown are for quantities in bulk such as tank car lots, motor transport lots or barge lots; and in cents per gallon; heavy fuel oils are in dollars per barrel of 42 U.S. gallons; wax and petrolatums are in cents per pound. Prices applying to barges or cargoes only are so designated.

Prices do not include taxes or inspection fees. Prices are published at the close of the business day.

Mid-Western prices in the tables were gathered from refiners with offices located in Chicago and the surrounding territory. While the prices are quoted on a Group 3 (Oklahoma) freight basis, this is in accordance with the custom of the oil industry which uses Group 3 as a price basis for the ease of comparing prices even when the material originates in another refining district. Other refinery prices are given by and for the particular refining district where the material is made and from which it is shipped.

When prices obtained by OILGRAM do not conform to these conditions the exception and the new conditions are noted in the news lead or in conjunction with the price table by footnote or otherwise, for the particular refinery or sales district involved.

Crude oil and products covered by OILGRAM'S news and price service, except where noted, have been represented to the publisher as fully up to the customary trade specifications indicated and according to the generally accepted methods of test: and all crude oil and all products thereof as having been lawfully produced and transported.

Any apparent error should be reported to the nearest OILGRAM or National Petroleum News office at once as no correction will be made after the second issue of the OILGRAM or National Petroleum News following its publication.

NOTICE—Owing to great demand, refiners generally limit quotations to regular customers and refuse bids, though higher, from others. Refiners' prices and sales shown; bids reported in market leads.

Summary of Daily Gasoline Prices (Nov. 4 to Nov. 10)

U. S. Motor, (ASTM octane)	Monday Nov. 10	Friday Nov. 7	Thursday Nov. 6	Wednesday Nov. 5	Tuesday Nov. 4
80-82 octane Ethyl:					
Oklahoma	6.75 – 7.25	6.75 – 7.25	6.75 – 7.25	6.75 – 7.25	6.75 – 7.25
Mid-Western (Group 3 basis)	7.4 (1)	7.4 (1)	7.4 (1)	7.4 (1)	7.4 (1)
N. Tex. (For shpt. to Tex. & N. M. dest'ns.)	7 –7.125 (2)	7 –7.125 (2)	7-7.125 (2)	7-7.125 (2)	7-7.125 (2)
W. Tex. (For shpt. to Tex. & N. M. dest'ns.)	7.25 (1)	7.25 (1)	7.25 (1)	7.25 (1)	7.25 (1)
72-74 octane:					
Oklahoma	6 – 6.375	6 – 6.375	6 – 6.375	6 – 6.375	6 – 6.375
Mid-Western (Group 3 basis)	6 – 6.375	6 – 6.375	6 – 6.375	6 – 6.375	6 – 6.375
N. Tex. (For shpt. to Tex. & N. M. dest'ns.)	6 – 6.625	6 – 6.625	6 – 6.625	6 – 6.625	6 – 6.625
W. Tex. (For shpt. to Tex. & N. M. dest'ns.)	6.125– 6.25	6.125– 6.25	6.125– 6.25	6.125– 6.25	6.125– 6.25
63-66 octane:					
Oklahoma	5.625– 6	5.625– 6	5.625– 6	5.625– 6	5.625– 6
Mid-Western (Group 3 basis)	5.6 – 6	5.6 – 6	5.6 – 6	5.6 – 6	5.6 – 6
N. Tex. (For shpt. to Tex. & N. M. dest'ns.)	5.625–6.25	5.625– 6.25	5.625– 6.25	5.625–6.25	5.625– 6.25
W. Tex. (For shpt. to Tex. & N. M. dest'ns.)	5.75 – 5.875	5.75 – 5.875	5.75 – 5.875	5.75 – 5.875	5.75 – 5.875
60 octane & below:					
Oklahoma	5.25 – 5.625	5.25 – 5.625	5.25 – 5.625	5.25 – 5.625	5.25 – 5.625
Mid-Western (Group 3 basis)	5.2 – 5.625	5.2 – 5.625	5.2 – 5.625	5.2 – 5.625	5.2 – 5.625
N. Tex. (For shpt. to Tex. & N. M. dest'ns.)	5.25 – 5.875	5.25 – 5.875	5.25 – 5.875	5.25 – 5.875	5.25 – 5.875
W. Tex. (For shpt. to Tex. & N. M. dest'ns.)	5.375– 5.5	5.375– 5.5	5.375– 5.5	5.375– 5.5	5.375– 5.5
Motor Gasoline, 72-74 octane (ASTM)					
New York harbor	8 – 8.5	8 – 8.5	8 – 8.5	8 – 8.5	8 – 8.5
New York harbor, barges	7.9 – 8.5	7.9 – 8.5	7.9 – 8.5	7.9 – 8.5	7.9 – 8.5
Philadelphia district	8 – 8.25	8 – 8.25	8 – 8.25	8 – 8.25	8 – 8.25
Baltimore district	7.75–8.25 (2)	7.75–8.25 (2)	7.75–8.25 (2)	7.75–8.25 (2)	7.75–8.25 (2)
Motor Gasoline:					
Western Penna. Bradford-Warren:					
Min. 80 Oct. ('39 Research)	8 (2)	8 (2)	8 (2)	8 (2)	8 (2)
74-76 Oct. (ASTM)	7.75 (1)	7.75 (1)	7.75 (1)	7.75 (1)	7.75 (1)
74-76 Oct. (L-3)	7.5–7.75 (2)	7.5–7.75 (2)	7.5 –7.75 (2)	7.5–7.75 (2)	7.5–7.75 (2)
Western Penna. Other Districts:					
Min. 80 Oct. ('39 Research)	8 –8.25 (2)	8 – 8.25 (2)	8 – 8.25 (2)	8 – 8.25 (2)	8 – 8.25 (2)
74-76 Oct. (ASTM)	6.875– 7.25	7 – 7.25	7 – 7.25	7 – 7.25	7 – 7.5
74-76 Oct. (L-3)	6.875– 7.25	7 – 7.25	7 – 7.25	7 – 7.25	7 – 7.25

REFINERY PRICES

Gasoline—U. S. Motor (ASTM Octane) except where otherwise specified

Prices Effective	Nov. 10	Nov. 3
OKLAHOMA		
80-82 oct. Ethyl	6.75 – 7.25	6.75 – 7.25
72-74 oct.	6 – 6.375	6 – 6.375
63-66 oct.	5.625– 6	5.625– 6
60 oct. & below	5.25 – 5.625	5.25 – 5.625
60-62 400 e.p.	5.375 (1)	5.375 (1)
MID-WESTERN (Group 3 basis)		
80-82 oct. Ethyl	7.4 (1)	7.4 (1)
72-74 oct.	6 – 6.375	6 – 6.375
63-66 oct.	5.6 – 6	5.6 – 6
60 oct. & below	5.2 – 5.625	5.2 – 5.625
N. TEX. (For shpt. to Tex. & N. M. dest'ns.)		
80-82 oct. Ethyl	7 –7.125 (2)	7 –7.125 (2)
72-74 oct.	6 – 6.625	6 – 6.625
63-66 oct.	5.625– 6.25	5.625– 6.25
60 oct. & below	5.25 – 5.875	5.25 – 5.875
60-62, 400 e.p.	5.5 – 6 (1)	5.5 – 6 (1)
W. TEX. (For shpt. to Tex. & N. M. dest'ns.)		
80-82 oct. Ethyl	7.25 (1)	7.25 (1)
72-74 oct.	6.125– 6.25	6.125– 6.25
63-66 oct.	5.75 – 5.875	5.75 – 5.875
60 oct. & below	5.375– 5.5	5.375– 5.5
CENT. W. TEX. (Prices to truck transports)		
80 oct. & above	7.125 (2)	7.125 (2)
72-74 oct.	6.125 (2)	6.125 (2)
67-69 oct.	5.625 (2)	5.625 (2)
62 oct. & below	5.375 (2)	5.375 (2)
AMARILLO, TEX. (For shpt. to W. Okla. & Tex. differential territory.)		
60 oct. & below	5.375–5.875 (2)	5.375–5.875 (2)
60-62, 400 e.p.	5.5 – 6 (1)	5.5 – 6 (1)

Prices Effective	Nov. 10	Nov. 3
KANSAS (For Kansas destinations only)		
80-82 oct. Ethyl	7.5 (1)	7.5 (1)
72-74 oct.	6.3 – 6.375	6.3 – 6.375
63-66 oct.	5.9 – 6	5.9 – 6
60 oct. & below	5.5 – 5.625	5.5 – 5.625
ARK. (For shipment to Ark. & La.)		
72-74 oct.	6 (1)	6 (1)
70-72 oct.	5.875 (1)	5.875 (1)
60 oct. & below	5.5 (1)	5.5 (1)
WESTERN PENNA. (Motor gasoline.)		
Bradford-Warren:		
Min. 80 oct. ('39 research)	8 (2)	8 (2)
74-76 oct. (ASTM)	7.75 (1)	7.75 (1)
74-76 oct. (L-3)	7.5–7.75 (2)	7.5–7.75 (2)
Other districts:		
Min. 80 oct. ('39 research)	8 –8.25 (2)	8 – 8.25 (2)
74-76 oct. (ASTM)	6.875– 7.25	7 – 7.5
74-76 oct. (L-3)	6.875– 7.25	7 – 7.5
CENTRAL MICHIGAN (FOB Central Mich. refinery group basis for shpt. within Mich.; shpts. may originate at plants outside Central group)		
U.S. Motor: (Oct. L-3):		
72-74 oct.	8.5	8.5
67-69 oct.	7.7 – 7.75	7.7 – 7.75
Str. run gasoline, excluding Detroit shpt.	6 – 6.25	6 – 6.25
OHIO (S. O. Ohio quotations for statewide delivery and subject to exceptions for local price disturbances)		
72-74 oct.	8.375	8.375
CALIFORNIA U.S. Motor:		
58-61 grav., 375-400 e.p., 65 oct. & above	6.5 – 8	6.5 – 8
54-58 grav., for outside state shipment	4.75 – 7	5 – 7
54-58 grav., for instate shipment	4.75 – 6.75	5 – 6.75

Kerosine, Gas & Fuel Oils

Prices Effective	Nov. 10	Nov. 3
OKLAHOMA		
41-43 grav. w.w.	4.375– 4.75	4.375– 4.75
42-44 grav., w.w.	4.5 – 4.875	4.5 – 4.875
Range Oil	4 – 4.375	4 – 4.375
No. 1 P.W.	3.875– 4.25	3.875– 4.25
No. 1 straw	3.5 –4.25 (2)	3.5 –4.25 (2)
No. 2 straw	3.625– 4.125	3.625– 4.125
No. 3 fuel	3.5 – 3.625	3.5 – 3.625
U.G.I. Gas Oil	3.625 (1)	3.625 (1)
No. 6 fuel	$0.90 (1)	$0.80-$0.90 (2)
14-16 fuel	$0.95 (2)	$0.95 (2)
MID-WESTERN (Group 3 basis)		
41-43 grav. w.w.	4.375– 4.75	4.375– 4.75
42-44 grav. w.w.	4.5 – 4.875	4.5 – 4.875
Range Oil	4 – 4.2 (2)	4 – 4.2 (2)
No. 1 p.w.	3.875– 4.125	3.875– 4.125
No. 2 straw	3.6 – 3.8	3.6 – 3.8
No. 3	3.5 – 3.7	3.5 – 3.7
No. 5	$0.85 (1)	$0.85 (1)
No. 6	$0.85-$0.875 (2)	$0.85-$0.875 (2)
N. TEX. (For shpt. to Tex. & N. M. dest'ns.)		
41-43 grav. w.w.	4.125– 4.875	4.125– 4.875
No. 1 P.W.	4.2 – 4.5 (2)	4.2 – 4.5 (2)
AMARILLO, TEX. (For shpt. to W. Okla. & Tex. differential territory.)		
41-43 grav. w.w.	4.75 (2)	4.75 (2)
No. 1 straw	4.3 (1)	4.3 (1)
KANSAS (For Kansas destinations only)		
41-43 grav. w.w.	4.7 (1)	4.7 (1)
42-44 gravity w.w.	4.8 – 4.875	4.8 – 4.875
No. 1 p.w.	4.2 – 4.3	4.2 – 4.3
No. 6 fuel	$0.90-$0.925 (2)	$0.90-$0.925 (2)

REFINERY PRICES (Continued)

(NOTE—Parenthetical figures after prices indicate number of companies quoting when less than three companies are quoting.)

NOTICE—Owing to great demand, refiners generally limit quotations to regular customers and refuse bids, though higher, from others. Refiners' prices and sales shown; bids reported in market leads.

Kerosine, Gas & Fuel Oil

(Continued)

Prices Effective	Nov. 10	Nov. 3
ARK. (For shipment to Ark. and La.)		
41-43 grav. w.w.	4.625 (1)	4.625 (1)
No. 1	4 (1)	4 (1)
No. 2	3.5 (1)	3.5 (1)
No. 3 fuel	3.5 (1)	3.5 (1)
Tractor fuel, for shpt. to Ark. points only	5.125 (1)	5.125 (1)
WESTERN PENNA.		
Bradford-Warren:		
45 grav. w.w.	6.25	6.25
46 grav. w.w.	6.375 (1)	6.375 (1)
No. 1 fuel	6.125–6.25	6.25 (1)
No. 2 "	6 –6.25	6.125–6.25 (2)
No. 3 "	6 –6.25 (2)	6.25 (1)
36-40 gravity	6 –6.25 (2)	6.25 (1)
Other districts:		
45 grav. w.w.	6.25 – 6.375	6.25 – 6.5
46 grav. w.w.	6.25 – 6.5	6.25 – 6.625
47 grav. w.w.	6.375– 6.625	6.375– 6.625
No. 1 fuel	5.75 – 6	5.875– 6
No. 2 "	5.625– 6.25	5.875– 6.375
No. 3 "	5.625– 6	5.875– 6
36-40 grav., Pittsburgh dist. prices excluded	5.5 – 5.875	5.625– 6
CENTRAL MICHIGAN (FOB Central Mich. refinery group basis for shpt. within Mich.; shpts. may originate at plants outside Central group.)		
47-49 gravity w.w.	5.8 – 6	5.8 – 6
P.W. Distillate	5.5 – 6	5.5 – 6
No. 3 gas oil, Straw	5 – 5.8	5 – 5.8
U.G.I. gas oil	4.5–4.875 (2)	4.5–4.875 (2)
Fuel Oils (Vis. at 100).		
300-500 Vis.	4 –4.25 (2)	4 –4.25 (2)
100-300 Vis.	4.5 (1)	4.5 (1)
OHIO (S. O. Ohio quotations for statewide delivery)		
Kerosine	7	7
CALIFORNIA		
40-43 grav. w.w.	4.5 – 6	4.5 – 6
San Joaquin Valley:		
Heavy fuel	$0.80	$0.80
Light fuel	$0.85	$0.85
Diesel fuel	2.75 – 4	2.75 – 4
Stove dist.	2.75 – 4	2.75 – 4
Los Angeles:		
Heavy fuel	$0.75 –$0.80	$0.75 –$0.80
Light fuel	$0.85	$0.85
Diesel fuel	2.75 – 4	2.75 – 4
Stove dist.	2.75 – 4	2.75 – 4
San Francisco:		
Heavy fuel	$0.85	$0.85
Light fuel	$0.95	$0.95
Diesel fuel	4.5	4.5
Stove dist.	5.5	5.5

Note: All above heavy fuels meet Pacific specification 400; light fuel, spec. 300; Diesel fuels, spec. 200; and stove distillate, spec. 100.

Lubricating Oils

WESTERN PENNA.

Prices are for sales made, or offers reliably reported, to jobbers & compounders only.

Viscous Neutrals—No. 3 col. Vis. at 70°F

200 Vis. (180 at 100°) 420-425 fl.		
0 p.t.	40.5 (1)	40.5 (1)
10 p.t.	39.5 (1)	39.5 (1)
15 p.t.	38.5 (1)	38.5 (1)
25 p.t.	33	33
150 Vis. (143 at 100) 400-405 fl.		
0 p.t.	38.5 (1)	38.5 (1)
10 p.t.	37.5 (1)	37.5 (1)
15 p.t.	36.5 (1)	36.5 (1)
25 p.t.	31	31
Cylinder Stocks		
Brt. stk., 145-155 vis. at 210°, 540-550 fl., No. 8 col.		
10 p.t.	30.5 (1)	30.5 (1)
15 p.t.	29.5 (1)	29.5 (1)
25 p.t.	25–26	25–27
600 S.R. filterable	15–16	15–16
650 S.R.	15.5–16.5	15.5–16.5
600 fl.	16–17	16–17
630 fl.	17–17.5	17–17.5

MID-CONTINENT (F. o. b. Tulsa)

Neutral Oils (Vis. at 100° F. 0 to 10 P.P.)

Pale Oils: Vis.	Color		
60- 85	No. 2	8 – 8.5	8 – 8.5
86-110	No. 2	8.5 – 8.75	8.5 – 8.75
150	No. 3	14.5	14.5
180	No. 3	15	15
200	No. 3	15–15.5	15–15.5
250	No. 3	16.5	16.5
280	No. 3	17–17.5	17–17.5
300	No. 3	18–18.5	18–18.5

Lubricating Oils (Cont'd)

Prices Effective	Nov. 10	Nov. 3
Red Oils:		
180—No. 5	15 (1)	15 (1)
200—No. 5	15–15.5 (2)	15–15.5 (2)
280—No. 5	17.5 (1)	17.5 (1)
300—No. 5	17.5–18.5	17.5–18.5

Note: Viscous Neutrals, 15-25 p.p. generally are quoted 0.5c under 0-10 p.p. oils. Non-viscous oils, 15-25 p.p., generally are quoted 0.25c under 0-10 p.p. oils.

Bright Stock—Vis. at 210°		
200 Vis. D	27 (1)	27 (1)
150-160 Vis. D:		
0 to 10 p.p.	23–23.5	23–23.5
10 to 25 p.p.	22.5–23	22.5–23
25 to 40 p.p.	23 (1)	23 (1)
150-160 vis. E	22–22.5	22–22.5
120 Vis. D:		
0 to 10 p.p.	22–22.5	22–22.5
600 S.R. Dark Green	9–9.5 (2)	9–9.5 (2)
600 S.R. Olive Green	10–11	10–11
631 S.R.	18.5 (1)	18.5 (1)
Black Oil	4.5–5 (2)	4.5–5 (2)

SOUTH TEXAS Neutral Oils

Vis.	Color		
Pale Oils: (*Vis. at 100°F.*)			
100 No. 1½-2½		6.5	6.5
200 No. 2-3		8.75	8.75
300 No. 2-3		9.25	9.25
500 No. 2½-3½		10	10
750 No. 3-4		10.25	10.25
1200 No. 3-4		10.375	10.375
2000 No. 4		10.5	10.5
Red Oils:			
100 No. 5-6		6.5 (2)	6.5 (2)
200 No. 5-6		8.75	8.75
300 No. 5-6		9.25	9.25
500 No. 5-6		10	10
750 No. 5-6		10.25	10.25
1200 No. 5-6		10.375	10.375
2000 No. 5-6		10.5–11.5	10.5–11.5

CHICAGO (From Mid-Continent p.l. crude.)

Neutral oils (Vis. at 100° F. 0 to 10 p.p.)

Pale Oils Vis.	Color		
60-85	No. 2	9.5 (1)	9.5 (1)
86-110	No. 2	10 (1)	10 (1)
150	No. 3	15.5 (1)	15.5 (1)
180	No. 3	16 (1)	16 (1)
200	No. 3	16 (1)	16 (1)
250	No. 3	17 (1)	17 (1)
Red Oils:			
180	No. 5	16 (1)	16 (1)
200	No. 5	16 (1)	16 (1)
250	No. 5	17 (1)	17 (1)
280	No. 5	18 (1)	18 (1)
300	No. 5	18.5 (1)	18.5 (1)

Note: Viscous oils, 15 to 30 p.p. are quoted 0.5c lower; 60-85 and 86-110 No. 2 non-viscous oils, 15 to 30 p.p., 0.25c lower.

Unfiltered Steam Refined: (Viscosity at 210°)		
140	11.5 (1)	11.5 (1)
160	12.5 (1)	12.5 (1)
200	13.5 (1)	13.5 (1)
Bright stocks, 160 vis. at 210 No. 8 color:		
0 to 10 p.p.	24 (1)	24 (1)
15 to 25 p.p.	23.5 (1)	23.5 (1)
30 to 40 p.p.	21.5 (1)	21.5 (1)
E filtered Cyl. Stock	15.5 (1)	15.5 (1)

Note: To obtain prices delivered in Chicago, add 0.25c per gal.

Natural Gasoline

(Group 3 & Breckenridge prices are to blenders on freight basis shown below. Shipments may originate in any Mid-Continent manufacturing district.)

FOB GROUP 3		
Grade 26-70	5.125 (Sales)	5.125 (Sales)
FOB BRECKENRIDGE		
Grade 26-70	4.75 (Sales)	4.75 (Sales)
CALIFORNIA (FOB plants in Los Angeles basin)		
75-85, 350-375 e.p. for blending	4.75 – 5.25	5 – 5.25

Naphtha and Solvent

Prices Effective	Nov. 10	Nov. 3
(FOB Group 3)		
Stoddard solvent	6.625	6.625
Cleaners' naphtha	7.125	7.125
V. M. & P. naphtha	7.125	7.125
Mineral spirits	6.125	6.125
Rubber solvent	7.125	7.125
Lacquer diluent	7.375– 8.125	7.375– 8.125
Benzol Diluent	7.875– 8.625	7.875– 8.625
WESTERN PENNA.		
Untreated naphtha	7 –7.25 (2)	6.75–7.25 (2)
Stoddard solvent	7.25 – 7.5	7.25 – 7.5
OHIO (S. O. Ohio quotations for statewide delivery):		
V.M.&P. naphtha, solvent	D.C. naphtha, 10	Varnolene & Sohio 10
Rubber solvent	9	9

Wax

White Crude Scale:

WESTERN PENNA. (Bbls. C.L., N. Y.)		
122-124 A.m.p.	6.25	6.25
124-126 A.m.p.	6.25	6.25
OKLAHOMA (Bbls. or burlap bags, C.L.)		
124-6 AMP	5.75 (1)	5.75 (1)
131-3 AMP	6 (1)	6.375 (1)

CHICAGO (FOB Chicago district refinery of one refiner, in bags or slabs loose, carloads. Melting points are EMP (ASTM) methods; add 3° F. to convert into AMP.)

Fully refined:		
122-124 (bags only)	5.9	5.9
125-127	5.9	5.9
127-129	6.15	6.15
130-132	6.85	6.85
132-134	7.1	7.1
135-137	7.85	7.85

Petrolatums

WESTERN PENNA. (Bbls., carloads; tank cars, 0.5c per lb. less.)

Snow White	6.125– 7.25	6.125– 7
Lily White	5.375– 6.125	5.375– 6.125
Cream White	4.375– 5.375	4.375– 5.375
Light Amber	3.375– 3.875	3.375– 3.875
Amber	3.125– 3.625	3.125– 3.625
Red	3 – 3.5	3 – 3.5

Group 3 Freight Rates

To Division Headquarters Points of Standard Oil Co. of Indiana

	Gasoline Kerosine Cents per Cwt.	Gasoline Kerosine Cents per gal. 6.6 lbs.	Distillate-Gas Oil-Fuel Oil Cents per Cwt.	Distillate-Gas Oil-Fuel Oil Cents per gal. 7.4 lbs.
Chicago, Ill.	36	2.376	32	2.368
Decatur, Ill.	32	2.112	31	2.294
Joliet, Ill.	36	2.376	32	2.368
Peoria, Ill.	33	2.178	31	2.294
Quincy, Ill.	31	2.046	29	2.146
Indianapolis, Ind.	38	2.508	39	2.886
Evansville, Ind.	35	2.310	37	2.738
South Bend, Ind.	44	2.904	**42	**3.108
Detroit, Mich.	64	4.224	51	3.774
Grand Rapids, Mich.	55	3.630	**50	**3.700
Saginaw, Mich.	66	4.356	53	3.922
Green Bay, Wis.	41	2.706	41	3.034
Milwaukee, Wis.	39	2.574	34.5	2.553
LaCrosse, Wis.	37	2.442	37	2.738
Minneapolis-St. Paul	37	2.442	37	2.738
Duluth, Minn.	41	2.706	41.5	3.071
Mankato, Minn.	37	2.442	37	2.738
Des Moines, Ia.	29	1.914	29	2.146
Davenport, Ia.	33	2.178	31	2.294
Mason City, Ia.	34	2.244	33.5	2.479
St. Louis, Mo.	29	1.914	26.5	1.961
Kansas City, Mo.	22	1.452	22.5	1.665
St. Joseph, Mo.	25	1.650	22.5	1.665
Fargo, N. D.	51	3.366	50.5	3.737
Huron, S. D.	43	2.828	42.5	3.145
Wichita				
From Ponca City	7.5	*0.495	7.5	†0.555
From Tulsa	12.5	*0.825	12.5	†0.925
From Cushing	11	*0.726	11	†0.814

*This rate also includes distillate rate at 6.6 lbs. per gal.

**This rate applies only to residual fuel and gas oil.

†This rate is exclusive of distillate which is based on 6.6 lbs. per gal. from Ponca City, Tulsa and Cushing, Okla., to Wichita. Includes only gas oil and fuel oil.

NOTE: There is no Group 3 rate to Wichita, Kans.

SEABOARD PRICES EXPORT AND COASTWISE

(NOTE—Parenthetical figures after prices indicate number of companies quoting when less than three companies are quoting.)

NOTICE—Owing to great demand, refiners generally limit quotations to regular customers and refuse bids, though higher, from others. Refiners' prices and sales shown; bids reported in market leads

Atlantic Coast

(Prices are of refiners, FOB their refineries & their tanker terminals, & of tanker terminal operators, FOB their terminals)—Prices Effective Nov. 10

MOTOR GASOLINE

District:	Min. 80 Oct. '39 Research (Max. 2 cc. Lead)	72-74 Oct. (ASTM)	68-70 Oct (ASTM)
N. Y. Harb.	8.5 – 9	8 – 8.5	8 (1)
N. Y. Harb., barges	8.5	7.9 – 8.5	7.9 (1)
Albany	8.1 – 8.8	....	....
Philadelphia	8 – 8.7	8 – 8.25	8 –8.2 (1)
Baltimore	7.75 – 8.5	7.75–8.25 (2)	....
Norfolk	7.62 – 8.5	7.5 –8.25 (2)	7.3 –7.5 (1)
Wilmington, N. C.	7.5 – 8	7.5 (1)	7.3 –7.5 (2)
Charleston	7.6 – 8	7.5 (1)	6.9 –7.1 (1)
Savannah	7.87 – 8.2	....	7.6 –7.8 (2)
Jacksonville	7.87 – 8.2	7.875 (1)	7.6 –7.8 (1)
Miami	7.87 –8.2 (2)	....	7.6 –7.8 (1)
Tampa	7.75 – 8.2	....	7.6 –7.8 (1)
Pensacola	7.5 –7.7 (1)	....	7.1 –7.3 (1)
Mobile	7.37 – 7.7	....	7.1 –7.3 (2)
New Orleans	6.75 – 7.37	6.25–6.875	....
Portland	8.3 – 9.4	8.6 (1)	....
Boston	8.2 – 9	8.5 (2)	8.5 (1)
Providence	8.2 – 9.1	8.5 (1)	....

FUEL OILS

	KEROSINE and/or NO. 1 FUEL	No. 2	No. 3	No. 5	No. 6
N. Y. Harb.	5.3 – 5.5	5.2	5.2	$1.65-1.75 (2&a)	$1.35 –$1.50
N. Y. Harb., barges	5.2 – 5.6	5.1	5.1	....	....
Albany	5.5 – 5.6	5.3 – 5.4	5.3 – 5.4	$1.95 (1)	$1.55 (1)
Philadelphia	5.4 – 5.8	5.2 – 5.25	5.2 – 5.25	$1.68	$1.35 –$1.50
Baltimore	5.4 – 5.45	5.2 – 5.25	5.2 – 5.25	$1.68 (1)	$1.35 –$1.50
Norfolk	5.3 – 5.5	5.2 – 5.25	5.2 –5.25 (2)	....	$1.35 (2)
Wilmington, N. C.	5.25 – 5.5	5.2 – 5.25	....	....	....
Charleston	5.4 – 5.5	5.2 (2)	....	....	$1.30 (2)
Savannah	5.25 – 5.5	....	....	....	$1.30 (1)
Jacksonville	5.25 – 5.5	5 (1)	5 (1)	....	$1.30 (1)
Miami	5.25–5.5 (2)	....	....	....	....
Tampa	5.25 – 5.5	5 (1)	....	....	$1.25 (1)
Pensacola	4.8 – 5 (1)	....	....	....	....
Mobile	4.75 – 5	....	....	....	....
New Orleans	4.25 – 4.625	3.875– 4 (2)	....	$1.68 (1)	$0.85 (2)
Portland	5.5	5.3	5.3 (2)	$1.95 (1)	$1.35 –$1.55
Boston	5.4	5.2	5.2 (2)	$1.65 (2)	$1.35
Providence	5.4	5.2	5.2	$1.60 –$1.65	$1.35

(a) This price is for a straight-run, low pour test No. 5 fuel.

	Bunker C Fuel Ships' bunkers (Ex Lighterage)	Diesel Oil Ships' bunkers (Ex Lighterage)	Diesel Oil Shore Plants	Gas House Gas Oil 28-34 Gravity
N. Y. Harbor	$1.35 –$1.50	$2.15	5.2 –5.3 (2)	5.3 (2)
Albany	$1.55 (1)	$2.35 (1)	5.3 –5.4 (2)	5.6 (1)
Philadelphia	$1.35 –$1.50	$2.15	....	....
Baltimore	$1.35 –$1.50	$2.15	5.2 (1)	5.2 (1)
Norfolk	$1.35	$2.15	5.2 (1)	5.2 (1)
Charleston	$1.30	$2.15 (2)	5.2 (1)	5.2 (1)
Savannah	$1.30 (1)	$1.99 (1)	....	....
Jacksonville	$1.30 (2)	$1.99–$2.10 (2)	....	....
Tampa	$1.25 (2)	$1.99–$2.10 (2)	....	....
New Orleans	$0.85	$1.65 (2)	4 (1)	4 (1)
Portland	$1.35 –$1.55	$2.23 –$2.25	5.3 (1)	5.4 (1)
Boston	$1.35	$2.15 –$2.18	5.2 (2)	5.3 (2)
Providence	$1.35	$2.15 –$2.18	5.2 (1)	5.3 (1)

Wax

(Melting points are AMP, 3° higher than EMP. Export prices FAS c.l. Domestic prices FOB, in bags, c.l. Scale solid; fully refined slabs.)

Prices Effective Nov. 10

Crude Scale:	New Orleans Export	N. Y. Domestic	N. Y. Export
124-6 Yellow	6–6.25 (1)	....	6–6.25 (1)
122-4 White	....	6.1–6.25	6–6.25
124-6 White	6–6.25 (2)	6.1–6.25	6–6.25
Fully Refined:			
123-5	6.25 (1)	5.6–6.45(2&a)	6.25 (1)
125-7	6.25 (1)	5.6–6.6(2&a)	6.25 (2)
128-30	6.5 (1)	5.6–7	6.5 (2)
130-32	6.75 (1)	5.85–7.25 (2)	6.5–6.75 (2)
133-5	7 (1)	6.15–7.55	7 (2)
135-7	7.25 (1)	6.4 (1)	7-7.25 (2)

108-11 White Match wax (tight bbls.).....6.5 (1)

(a) 0.4c discount generally given for slabs loose.

Naphtha

Prices Effective Nov. 10

	V.M.&P. Naphtha	Mineral Spirits
Baltimore	10–10.5 (2)	9 – 9.5
New York Harbor	10.5 (2)	9.5
Philadelphia district	10.5 (2)	9.5
Boston	11 (2)	10
Providence	11 (1)	10 (2)

Pacific Export

(Quotations at seaboard, Los Angeles, cargo lots, except where otherwise noted.)

Prices Effective	Nov. 10	Nov. 3
375 e.p. blend, 70 oct.	6.25 – 6.375	6.25 – 6.375
390 e.p. blend, 68 oct.	6 – 6.25	6 – 6.25
390 e.p. blend, 66 oct.	5.875– 6	5.875– 6
400 e.p. blend, 65 oct. min.	5.75 – 6	5.75 – 6
U. S. Motor, under 65 octane	5.25 – 5.5	5.25 – 5.5
38-40 grav. w.w. kero., 150 fire point	4.5 – 5	4.5 – 5
41-43 grav., w.w. kero.	4.75 – 5	4.75 – 5
44-grav., w.w. kero.	5 – 5.5	5 – 5.5
Diesel fuel, 24 & above	$1.25 –$1.30	$1.25 –$1.30
Diesel fuel, under 24	$1.15 –$1.25	$1.15 –$1.25
30-34 grav. diesel (gas oil) Pac. Spec. 200	$1.25 –$1.35	$1.25 –$1.35
Grade C fuel, Pac. Spec. 400	$0.85 –$0.90	$0.85 –$0.90
In Ship's Bunkers, or deep tank lots:		
Diesel fuel, Pac. Spec. 200	$1.35 –$1.45	$1.35 –$1.45
Grade C fuel, Pac. Spec. 400	$0.85 –$0.90	$0.85 –$0.90
Cased Goods: (Per case)		
375-400 e.p. blend, 65 oct. & above	$1.50 –$1.60	$1.50 –$1.60
400 e.p. blend, under 65 oct.	$1.40 –$1.50	$1.40 –$1.50
U. S. Motor	$1.35 –$1.45	$1.35 –$1.45
40-43 grav. w.w. kero., 150 fire point	$1.30 –$1.40	$1.30 –$1.40
Kero., p.w.	$1.25 –$1.35	$1.25 –$1.35

Tanker Rates

(Approximate last paid rates, cents per bbl.; Gulf-N. Atlantic, not East of N. Y.)

Hvy. Crude & Fuel (10 to 19.9 gravity)	57
Light Crude, (30 grav. or Lighter)	50
Gasoline	50
Kerosine	53
No. 2 Fuel	57

Gulf Coast

(Prices for sales made or firm offers reliably reported for sales pending in cargoes FOB ship at Gulf, for minimum of 20,000 bbls. Prices are by refiners only to other refiners, export agents, or to large tanker terminal operators at the customary trade specifications noted.)

Prices Effective Nov. 10

Domestic

Motor Gasoline

Min. 80 oct. '39 Research, max. 2cc lead	6.75
60-62, Gravity, Max. 400 e.p.	
72-74 oct. leaded (ASTM)	6.25 – 6.375
70 oct. unleaded "	6.25 – 6.625
68 oct. " "	6.25 – 6.5
65 oct. " "	5.75 – 6
60 oct. " "	5.5 – 5.75
41-43 w.w. kerosine	4 – 4.5
No. 2 fuel	4 – 4.25
Gas Oil—Less than ½ of 1% sulfur.	
Below 43 diesel index	3.75 – 4.25
43-47 " "	4.125– 4.25
48-52 " "	4.125– 4.25
53-57 " "	4.25 – 4.375
58 & above diesel index	4.375– 4.5
Diesel Oil, ships' bunkers (ex-lighterage)	$1.65 –$1.80
Bunker C, " " "	$0.85 –$0.95
Bunker C, cargoes	$0.85 –$0.96

Export

Motor Gasoline

60-62 Gravity, Max. 400 e.p.	
72-74 oct. leaded (ASTM)	6.25 – 6.375
70 oct. unleaded "	6.25 – 6.625
68 oct. " "	6.25 – 6.5
65 oct. " "	5.75 – 6
60 oct. " "	5.5 – 5.75
41-43 w.w. kerosine	4 – 4.5
Gas Oil—Less than ½ of 1% sulfur.	
Below 43 diesel index	3.75 – 4.25
43-47 " "	4.125– 4.25
48-52 " "	4.125– 4.25
53-57 " "	4.25 – 4.375
58 & above diesel index	4.375– 4.5

MID-CONTINENT LUBES

(At Gulf; in packages, FAS.; in bulk, FOB terminals)

Nov. 10

	New Steel Drums	Bulk
200 vis. D 210 brt. stock	34–35 (2)	28.8 (2)
150 vis. D 210 brt. stock 0-10 p.p.	30–31 (2)	24.8 (2)
10-25 p.p.	29.5 (1)	24.3 (1)
100 vis. D 210 brt. stock 0-10 p.p.	29.5 (1)	24.3 (1)
10-25 p.p.	29 (1)	23.8 (1)
200 vis. No. 3 col. neutral: 0-10 p.p.	22 (1)	16.8 (1)

SOUTH TEXAS LUBES

(Vis. at 100°, c. t. 0, blk. exprt. shp., FOB terminals)

Unfiltered Pale Oils: Vis. Color	Nov. 10	Nov. 3
100 No. 3	6.25–6.5 (2)	6.25–6.5 (2)
200 No. 3	7.75–8.75 (2)	7.75–8.75 (2)
300 No. 3	8.25–9.25 (2)	8.25–9.25 (2)
500 No. 3½	9.25–10.25 (2)	9.25–10.25 (2)
750 No. 4	9.75–11 (2)	9.75–11 (2)
1200 No. 4	10.25–11.5 (2)	10.25–11.5 (2)
2000 No. 4	12.5 (1)	12.5 (1)

Red Oils:

Vis. Color		
100 No. 5-6	6.5 (1)	6.5 (1)
200 No. 5-6	7.75–8.75 (2)	7.75–8.75 (2)
300 No. 5-6	8.25–9.25 (2)	8.25–9.25 (2)
500 No. 5-6	9.25–10.25 (2)	9.25–10.25 (2)
750 No. 5-6	9.75–11 (2)	9.75–11 (2)
1200 No. 5-6	10.25–11.5 (2)	10.25–11.5 (2)
2000 No. 5-6	11–12.5 (2)	11–12.5 (2)

TANK WAGON PRICES

Commercial or consumer tank car, tank wagon, dealer, and service station prices for gasoline **do not include taxes;** *they do, however, include inspection fees as shown in general footnote. Gasoline taxes, shown in separate column, include 1.5c federal, and state taxes; also city and county taxes as indicated in footnotes. Kerosine tank wagon prices also do not include taxes; kerosine taxes where levied are indicated in footnotes. Dealer discounts are shown in footnotes. These prices in effect Nov. 10, 1941 as posted by principal marketing companies at their headquarters offices, but subject to later correction.*

S. O. New Jersey

Esso (*Regular Grade*)

	Consumer Tank Wagon	Dealer T.W.	Gaso-line Taxes	Kero-sine T.W.
*Atlantic City, N. J.	9	9.5	4.5	7.9
*Newark, N. J.	9	9.5	4.5	7.9
Annapolis, Md.	9.35	9.85	5.5	9.7
Baltimore, Md.	8.75	9.25	5.5	8.7
Cumberland, Md.	10.15	10.65	5.5	10.2
Washington, D. C.	9	9.5	3.5	9.2
Danville, Va.	10.45	10.95	6.5	10.45
Norfolk, Va.	9.25	9.75	6.5	10.2
Petersburg, Va.	9.55	10.05	6.5	11.2
Richmond, Va.	9.55	10.05	6.5	11.2
Roanoke, Va.	10.75	11.25	6.5	10.7
Charleston, W. Va.	11.05	11.55	6.5	11.5
Parkersburg, W. Va.	10.35	10.85	6.5	11.2
Wheeling, W. Va.	10.35	10.85	6.5	11.8
Charlotte, N. C.	10.9	11.4	7.5	9.5
Hickory	11.45	11.95	7.5	10.5
Mt. Airy, N. C.	11.3	11.8	7.5	9.7
Raleigh, N. C.	10.65	11.15	7.5	10.5
Salisbury, N. C.	10.95	11.45	7.5	10.9
Charleston, S. C.	9.75	10.25	7.5	....
Columbia, S. C.	10.6	11.1	7.5	....
Spartanburg, S. C.	11.3	11.8	7.5	....

	Mineral Spirits T.W.	V.M.&P. T.W.
Newark, N. J.	12.5	14
Baltimore, Md.	15	....
Washington, D. C.	15	....

Fuel Oils—T.W.	No. 1	No. 2	No. 3
Atlantic City, N. J.	7.9	7.2	7.2
Newark	7.9	7.2	7.2
Annapolis, Md.	....	7.45	....
Baltimore	7.7	7.2	7.2
Washington, D. C.	8.2	7.45	7.45
Norfolk, Va.	7.9	7	7
Petersburg	8.2	7.2	....
Richmond	8.2	7.2	7.2
Charlotte, N. C.	8.5	8.6	....
Hickory	....	8.2	....
Raleigh	9.5	8.3	....
Charleston, S. C.	....	7.2	....
Columbia	....	8.2	....
Spartanburg	....	9	....

*Effective May 20, '41, minimum retail resale price of 13c posted thru New Jersey.

Discounts:

Esso gasoline—to undivided dealers, 0.5c off dealer t.w.

Kerosine—1c off t.w. price for 25 gals. or more, under contract thru territory (Baltimore city contract not necessary) except no discount in state of New Jersey.

Naphthas—To buyers taking following quantities at one time: Newark, 2c per gal. on 200 gals. or more, less than 200 gals. 0.5c higher price: Baltimore, 2c off on 25 to 100 gals. and 3c on over 100 gals.; Washington, 2c off to contract buyers.

Socony-Vacuum Oil Co., Inc.

Socony Mobilgas (*Regular Grade*)

	Com. Cons. T.W.	Undiv. Dlr. T.W.	Gaso-line Taxes
New York City:			
Manhattan & Bronx	8.9	9.4	*5.5
Kings & Queens	8.9	9.4	*5.5
Richmond	8.5	9	5.5
Albany, N. Y.	8.7	9.2	5.5
Binghamton, N. Y.	9.8	10.3	5.5
Buffalo, N. Y.	9	9.5	5.5
Jamestown, N. Y.	9.2	9.7	5.5
Mt. Vernon, N. Y.	8.9	9.4	5.5
Plattsburg, N. Y.	9.8	10.3	5.5
Rochester, N. Y.	9.6	10.1	5.5
Syracuse, N. Y.	9.3	9.8	5.5
Bridgeport, Conn.	8.8	9.3	4.5
Danbury, Conn.	9.3	9.8	4.5
Hartford, Conn.	9.4	9.9	4.5
New Haven, Conn.	8.8	9.3	4.5
Bangor, Me.	9.5	10	5.5
Portland, Me.	9.1	9.6	5.5
Boston, Mass.	8.7	9.2	4.5
Concord, N. H.	10.2	10.7	5.5
Lancaster, N. H.	10.8	11.3	5.5
Manchester, N. H.	10.1	10.6	5.5
Providence, R. I.	8.8	9.3	4.5
Burlington, Vt.	9.7	10.2	5.5
Rutland, Vt.	9.8	10.3	5.5

	Mineral Spirits T.W.	V.M.&P. T.W
Buffalo, N. Y.	11.9	13.1
†New York City	10.5	11.5
Rochester, N. Y.	12.7	13.9
Syracuse, N. Y.	13.5	....
Boston, Mass.	11.5	12.5
Hartford Conn.	13.8	14.8
Providence, R. I.	12.5	13.5

	Kero-sine Yard	Kero-sine TW	Mobil-fuel Diesel TC	Mobil-fuel Diesel TW	Mobil-heat Fuel Yard	Mobil-heat Fuel TW
New York:						
Manhat'n & Bronx	5.6	8	...	7.5	5.5	7.2
Kings & Queens	5.6	8	...	7.5	5.5	7.2
Richmond	5.5	8	...	7.4	5.4	7
Albany	5.7	7.7	5.5	7.5	5.5	7.2
Binghamton	7.1	9.1	...	8.9	6.9	8.4
Buffalo	6.8	8.8	6.7	8.7	6.7	8.2
Jamestown	6.9	8.9	...	8.8	6.8	8.2
Mt. Vernon	5.7	8.2	...	7.6	5.6	7.2
Plattsburg	6.3	8.3	...	8.1	6.1	7.6
Rochester	6.9	8.9	6.4	8.4	6.4	7.9
Syracuse	6.7	8.7	6.3	8.3	6.3	7.8
Conn.:						
Bridgeport	5.8	7.8	...	...	5.7	7
Danbury	6.3	8.3	...	...	6	7
Hartford	5.9	7.9	...	7.7	5.7	7.2
New Haven	5.6	7.6	...	7.5	5.5	7.1
Maine:						
Bangor	6.1	8.1	5.9	7.9	5.9	7.3
Portland	5.7	8.1	5.5	7.5	5.5	7.2
Mass.:						
Boston	5.8	8	5.6	7.6	5.6	7.2
N. H.:						
Concord	6.6	8.6	...	...	6.7	8.2
Lancaster	7.7	9.7	...	...	7.7	9.2
Manchester	6.7	9	...	...	6.4	7.9
R. I.:						
Providence	5.8	7.8	5.6	7.6	5.6	7.1
Vermont:						
Burlington	6.3	8.3	6	8	6	7.4
Rutland	6.5	8.5	...	8.2	6.2	7.7

*Plus 2% city sales tax computed at time of each sale.

†Prices apply to consumers only in quantities over 1000 gals. annually; for quantities under 1000 gals. annually, add 0.5c per gal.

Discounts: Diesel—On t.w. deliveries, 0.5c for at least 400 gals.; 1c for full tank truck.

Atlantic Refining

Atlantic White Flash Gasoline (*Regular Grade*)

	Commercial T.C.	Dealer T.W.	Gaso-line Taxes	Kero-sine T.W.
Philadelphia, Pa.	8.5	9.5	5.5	10.15
Pittsburgh	9	10	5.5	10.5
Allentown	9	10	5.5	10.5
Erie	9	10	5.5	10.5
Scranton	9	10	5.5	10.5
Altoona	9	10	5.5	10.5
Emporium	9	10	5.5	10.5
Indiana	9	10	5.5	10.5
Uniontown	9	10	5.5	10.5
Harrisburg	9	10	5.5	10.5
Williamsport	9	10	5.5	10.5
Dover, Del.	...	10	5.5	10.5
Wilmington, Del.	...	9.5	5.5	10
Boston, Mass.	...	9.7	4.5	8
Springfield, Mass.	...	10.6	4.5	8.9
Worcester, Mass.	...	10.3	4.5	8.5
Fall River, Mass.	...	9.8	4.5	8.6
Hartford, Conn.	...	10.4	4.5	7.9
New Haven, Conn.	...	9.8	4.5	9
Providence, R. I.	...	9.8	4.5	8.6
Atlantic City, N. J.	...	9.5	4.5	7.9
Camden, N. J.	...	9.5	4.5	7.9
Trenton, N. J.	...	9.5	4.5	7.9
Annapolis, Md.	...	9.85	5.5	8.7
Baltimore, Md.	...	9.25	5.5	7.7
Hagerstown, Md.	...	10.35	5.5	8.2
Richmond, Va.	...	10.05	6.5	10.2
Wilmington, N. C.	...	10.35	7.5	9.8
Brunswick, Ga.	...	10	7.5	*9
Jacksonville, Fla.	...	10	8.5	10

	Mineral Spirits T.W.†	V.M.&P. T.W.†
Philadelphia, Pa.	10.5	12
Lancaster, Pa.	11.5	13
Pittsburgh, Pa.	12.5	12.5

Fuel Oils—T.W.	1	2	3	5	6
Phila., Pa.	8	7.2	7.2	4.75	3.75
Allentown, Pa.	8.5	7.5	7.5	....	....
Wilmington, Del.	8.00	7.2	7.2	....	....
Springfield, Mass.	8.9	7.6	7.6	....	....
Worcester, Mass.	8.5	7.5	7.5	....	....
Hartford, Conn.	7.9	7.2	7.2	....	....

*Does not include 1c Georgia kerosine tax.

†Mineral Spirits prices also apply to Stoddard Solvent; V.M.&P. prices also apply to Light Cleaners Naphtha.

Discounts:

Gasoline—to undivided dealers, 0.5c off dealer t.w., except Georgia & Florida dealer t.w. and undivided dealer t.w. prices are same.

Kerosine—Thru Penna. & Delaware, 2c off t.w. price on t.w. deliveries of 25 gals. or more at one time.

S. O. Ohio††

***Sohio X-70 Gasoline (*Regular Grade*)**

	Consumer T.W.	**Re-sellers	‡S.S.	Gaso-line Taxes	†Kero-sine T.W
Ohio, Statewide	12	10	13.5	5.5	9
Akron	12	9.5	12	5.5	9
Cincinnati	12	9.5	12.5	5.5	9
Cleveland	12	9.5	12.5	5.5	9
Columbus	12	9.5	12.5	5.5	9
Dayton	12	9.5	12.5	5.5	9
Marietta	12	9.5	12.5	5.5	9
Portsmouth	12	9.5	12.5	5.5	9
Toledo	12	9.5	12.5	5.5	9
Youngstown	12	9.5	12.5	5.5	9

Aviation Gasoline—Statewide

	Consumer T.W.	Gasoline Taxes
Sohio Aviation	14.5	5.5
Esso Ethyl Aviation 74 Oct.	15.5	5.5
Esso Ethyl Aviation 80 Oct.	16.5	5.5
Esso Ethyl Aviation 91 Oct.	17.5	5.5
Esso Ethyl Aviation 100 Oct.	24.5	5.5

	†Naphthas—T.W. State-wide	Lucas County
S. R. Solvent	13.5	13.5
D. C. Naphtha	14.5	14.25
V.M.&P. Naphtha	14.5	14.25
Varnolene	14.5	14.25
Sohio Solvent	14.5	14.25

Fuel Oils—T.W.	No. 1	No. 2	No. 3	No. 4
Ohio, Statewide	8	8	7.5	....
Cleveland	10	10	9.5	7.25

*Renown (third-grade) prices are same as X-70 unless otherwise noted.

**Except authorized agents.

†Kerosine prices are ex 1c state tax. Naphtha prices are ex 1.5c federal & 4c state tax.

‡Prices at company-operated stations.

††Statewide prices are subject to exceptions other than those shown.

Discounts:

Esso aviation—on contract to hangar operators and resellers, 2c off consumer t.w.

Fuel Oils—Statewide prices are for t.w. & drum deliveries of 50 gals. or more; prices for deliveries of less than 50 gals. are 0.5c higher. Cleveland Nos. 1, 2, and 3 prices are for bulk deliveries of 5 to 99 gals.; 100 gals. and over are 2c less. Cleveland No. 4 price is for full compartment hose dump only.

Naphthas—to contract consumers off t.w. prices—Statewide: 300 to 999 gals., 0.5c; 1000 to 2499 gals., 0.75c; 2500 to 4999 gals., 1c; 5000 or more gals., 1.5c. Lucas County: Less than 50 gals., tank wagon price; 50 to 249 gals., 0.5c; 250 to 499 gals., 1c; 500 gals. or over, 1.5c.

S. O. Kentucky

Crown Gasoline (*Regular*)
Standard (*Third Grade*)

	†Net Dealer Crown	Standard	Gaso-line Taxes	Kero-sine T.W.
Covington, Ky.	10	9	6.5	9
Lexington, Ky.	11	10	6.5	9
Louisville, Ky.	10.5	9.5	6.5	8.5
Paducah, Ky.	9	8.5	6.5	8.5
Jackson, Miss.	10.5	9.5	7.5	*8.5
Vicksburg, Miss.	10	9	7.5	*8
Birmingham, Ala.	10.5	9.5	*8.5	9
Mobile, Ala.	9.5	7.5	*9.5	8.5
Montgomery, Ala.	10.5	9.5	*9.5	*9
Atlanta, Ga.	11	....	7.5	*9
Augusta, Ga.	11	....	7.5	*8.5
Macon, Ga.	11	....	7.5	*9
Savannah, Ga.	10	....	7.5	*8
Jacksonville, Fla.	10	....	8.5	8
Miami, Fla.	10	....	8.5	8
Pensacola, Fla.	9.5	8.5	*9.5	8
Tampa, Fla.	10	....	8.5	8

*Taxes: In tax column are included these city and county gasoline taxes: Mobile, 2c city; Birmingham, 1c city; Montgomery, 1c city and 1c county; Pensacola, 1c city. Georgia and Montgomery, Ala. have 1c kerosine tax, Mississippi 0.5c, not included in above prices.

†Consumer t.w. prices are same as net dealer prices.

S. O. Indiana

Red Crown (*Regular Grade*)
Stanolind (*Third Grade*)

	Red Crown Cons. T.W.	Dealer Prices Red Crown	Stano-lind	Gaso-line Taxes	Kero-sine T.W.
Chicago, Ill.	11.6	9.6	8.5	4.5	10.3
Decatur, Ill.	10.9	8.9	8	4.5	9.5
Joliet, Ill.	11.9	9.6	8.5	4.5	10.3

(Continued on next page)

Above prices include these inspection fees on both gasoline and kerosine unless otherwise specified, per gallon:
Alabama 1/40c on gasoline, 1/2c on kerosine; Arkansas 1/20c; Florida 1/8c; Illinois 3/100c; Indiana 1/5c in lots of 25 bbls. or less, 2/25c in lots of more than 25 bbls.; Kansas 1/50c; Louisiana 1/32c; Minnesota 7/200c; Missouri 1/50c; Nebraska 3/100c; Nevada, gasoline 1/20c; North Carolina 1/4c; North Dakota 1/20c; Oklahoma 2/25c; South Carolina 1/8c; South Dakota 1/20c; Tennessee 2/5c; and Wisconsin 3/100c.
Kerosine inspection fees only: Iowa 3/50c; Michigan 1/5c per gal.

TANK WAGON PRICES

Commercial or consumer tank car, tank wagon, dealer, and service station prices for gasoline **do not include taxes;** *they do, however, include inspection fees as shown in general footnote. Gasoline taxes, shown in separate column, include 1.5c federal, and state taxes; also city and county taxes as indicated in footnotes. Kerosine tank wagon prices also do not include taxes; kerosine taxes where levied are indicated in footnotes. Dealer discounts are shown in footnotes. These prices in effect Nov. 10, 1941 as posted by principal marketing companies at their headquarters offices, but subject to later correction.*

S. O. Indiana (Cont'd)

Red Crown (*Regular Grade*)
Stanolind (*Third Grade*)

	Red Crown Cons. T.W.	Dealer Prices Red Crown	Stano-lind	Gaso-line Taxes	Kero-sine T.W.
Peoria, Ill.	11.7	9.2	9.1	4.5	10.1
Quincy, Ill.	8.9	7.9	7.9	4.5	10
Indianapolis, Ind.	11.6	9.7	9.6	5.5	*9.8
Evansville, Ind.	11.4	9.9	8.4	5.5	*9.6
South Bend, Ind.	12	10.5	10	5.5	*10.2
Detroit, Mich.	11.4	9.9	9.4	4.5	9.6
Grand Rapids, Mich.	11.4	9.9	9.4	4.5	9.6
Saginaw, Mich.	11.4	9.9	9.4	4.5	9.6
Green Bay, Wis.	12.2	10.7	10.2	5.5	10.6
Milwaukee, Wis.	12.1	10.6	10.1	5.5	10.5
La Crosse, Wis.	11.9	10.4	9.9	5.5	10.3
Minneapolis-St. Paul	11.9	10.4	9.5	5.5	10.3
Duluth, Minn.	12.2	10.7	10.2	5.5	10.6
Mankato, Minn.	11.9	10.4	9.5	5.5	10.3
Des Moines, Ia.	11.4	7.4	6.9	4.5	*9.8
Davenport, Ia.	11.7	10.2	9.7	4.5	*10.1
Mason City, Ia.	11.7	10.2	9.7	4.5	*10.1
St. Louis, Mo.	10.3	8.8	8.6	*4.5	9.8
Kansas City, Mo.	10.4	8.9	7.9	*4.5	9.4
St. Joseph, Mo.	11.2	9.7	8.7	*4.5	9.6
Fargo, N. D.	12.9	11.4	10.5	5.5	11.3
Huron, S. D.	12.3	10.8	10.3	5.5	10.7
Wichita, Kans.	10.3	8.2	6.5	4.5	8

Stanavo Aviation 73 Octane

Chicago, Ill.	15.7	4.5
Milwaukee, Wis.	15.9	5.5
Minneapolis, Minn.	15.7	5.5
St. Louis, Mo.	15.2	*4.5
Kansas City, Mo.	14.8	*4.5
Fargo, N. D.	16.7	5.5
Huron, S. D.	16.1	5.5

	Oleum Spirits	V.M.&P. Naphtha	Stani-sol	*Taxes
(Prices are base prices before discounts)				
Chicago	13.5	13.8	12.8	4.5
Detroit	15.8	15	16.3	4.5
K. C., Mo.	13.3	14.3	13.8	1.5
St. Louis, Mo.	13.7	14.7	13.2	1.5
Milwaukee	14.4	15.4	13.1	5.5
Minneap'lis	14.2	15.2	13.5	5.5

Fuel Oils T. W.
Chicago

	Standard Heater Oil
1-99 gals.	9
100-149 gals.	8
150 gals. & over	7.5

	Stanolex Fuel Oil No. 1	Stanolex Furnace Oil
1-99 gals.	8.5	8.5
100-149 gals.	7.5	7.5
150-399 gals.	7.5	7.5
400 gals. & over	7	7

	Stanolex Fuel Oil A	Stanolex Fuel Oil B
1-99 gals.	8	8
100-399 gals.	7	7
400-749 gals.	6	6
750 gals. & over	5.25	5.25

Stanolex Bunker C Fuel Oil

1-399 gals.	6.5
400-999 gals.	5.5
1000 gals. & over	4.5

Other Points:	Stanolex No. 1	Stanolex Furnace Oil
Indianapolis		
1-99 gals.	...	*8.7
100 gals. & over	...	*7.7
Detroit		
1-99 gals.	...	7.8
100 gals. & over	...	6.8
Milwaukee		
1-99 gals.	...	8.7
100 gals. & over	...	7.7
Minneapolis		
1-99 gals.	...	8.5
100 gals. & over	...	7.5
St. Louis		
1-99 gals.	8.3	7.8
100 gals. & over	7.3	6.8
Kansas City		
1-99 gals.	...	7.6
100 gals. & over	...	6.6

*Taxes: In gasoline tax column are included these city taxes—Kansas City, St. Joseph, and St. Louis, 1c. Indiana kerosine and fuel oil prices are ex 4c state tax: Iowa kerosine prices are ex 3c state tax. In naphtha tax column are included 1.5c federal tax and state taxes.

S. O. Nebraska

Standard Red Crown Gasoline (*Regular Grade*)

	T.W. Dealer	Gaso-line Taxes	Kero-sine T.W.
Omaha	11.4 8.9	6.5	9.8
McCook	12 9.4	6.5	9.5
Norfolk	11.9 10.4	6.5	10.3
North Platte	12.3 9.9	6.5	10.7
Scottsbluff	12.4 9.5	6.5	9.5

S. O. Louisiana

Esso Gasoline (*Regular Grade*)

	Consumer Tank Wagon	Dealer T.w.	Gaso-line Taxes	Kero-sine T.W.
New Orleans, La.	8.75	9.25	8.5	*9
Baton Rouge, La.	8.75	9.25	8.5	*9.5
Alexandria, La.	8.75	9.25	8.5	*9.5
Lafayette, La.	9	9.5	8.5	*9
Lake Charles, La.	9	9.5	8.5	*11
Shreveport, La.	8.5	9	8.5	*8
Knoxville, Tenn.	11.5	12	8.5	12.5
Memphis, Tenn.	8.75	9.25	8.5	10.5
Chattanooga, Tenn.	10.5	11	8.5	11
Nashville, Tenn.	10.5	11	8.5	10
Bristol, Tenn.	9.75	10.25	8.5	12
Little Rock, Ark.	9.5	10	8	10

*Louisiana kerosine prices are ex 1c state tax.
Discounts:
Esso Gasoline—To undivided dealers, 0.5c off dealer t.w.

Humble Oil & Refining Co.

Humble Motor Fuel (*Regular Grade*)
Thriftane (*Third Grade*)

	Humble *Tank Wagon	Re-tail	Thriftane *Tank Wagon	Re-tail	Gaso-line Taxes
Dallas, Tex.	8.5†	11.5	7.5†	9.5	5.5
Ft. Worth, Tex.	8.5††	10.5	7.5‡	9	5.5
Houston, Tex.	8.5	12.5	7.5	10.5	5.5
San Antonio, Tex.	8.5	12.5	7.5	10.5	5.5

	Kerosine *Tank Wagon	Retail
Dallas, Tex.	7	11
Ft. Worth, Tex.	7	11
Houston, Tex.	8	11
San Antonio, Tex.	7	10

74 Oct. Aviation Gasoline, Clear	Tank Car
FOB Baytown, Tex.	8.5

*To all classes of dealers & consumers.
†Less 1c allowance to dealers only.
‡Less 1½c allowance to dealers only.
††Less 2c allowance to dealers only.

The Texas Co.

	Gasoline—Dealer Fire-Chief (*Regular*)	T.W. Indian (*3rd Grade*)	Gaso-line Taxes
Dallas, Tex.	8.5*	7.5*	5.5
Ft. Worth, Tex.	8.5*	7.5*	5.5
Wichita Falls, Tex.	8.5	7.5	5.5
Amarillo, Tex.	8.5	7.5	5.5
Tyler, Tex.	8.5	7.5	5.5
El Paso, Tex.	11	10.5	5.5
San Angelo, Tex.	8.5	7.5	5.5
Waco, Tex.	8.5*	7*	5.5
Austin, Tex.	8.5	7.5	5.5
Houston, Tex.	8.5	7.5	5.5
San Antonio, Tex.	8.5	7.5	5.5
Port Arthur, Tex.	8.5	7.5	5.5

*Less 1c temporary allowance to all dealers.

Continental Oil Co.

	Conoco Bronz-z-z (*Regular*) †Tank Wagon	De-mand (*3rd Grade*)	Gaso-line Taxes	Kero-sine T.W.
Denver, Col.	10	9	5.5	11
Grand Junction, Col.	12.5	11.5	5.5	12.5
Pueblo, Col.	9.5	8.5	5.5	9.5
Casper, Wyo.	11.5	10.5	5.5	12
Cheyenne, Wyo.	10.5	9.5	5.5	11.5
Billings, Mont.	11.5	10.5	6.5	12.5
Butte, Mont.	10.5	9.5	6.5	13.5
Great Falls, Mont.	10.5	9.5	6.5	12.5
Helena, Mont.	10.5	9.5	6.5	13
Salt Lake City, Utah	13.5	12.5	5.5	14.5
Boise, Ida.	13.6	12.6	6.5	16.5
Twin Falls, Ida.	14.6	13.6	6.5	17
Albuquerque, N. M.	10.5	9.5	*7	10
Roswell, N. M.	8.5	7.5	*7	8.5
Santa Fe, N. M.	10.5	9.5	*7.5	10
Ft. Smith, Ark.	8.5	5.75	*7	6.5
Little Rock, Ark.	9.25	6.15	8	8
Texarkana, Ark.	8.5	6.5	*5.5	6
Muskogee, Okla.	8.5	7.5	7	8
Oklahoma City, Okla.	8	7.5	7	8
Tulsa, Okla.	8	7.5	7	8

*Taxes: In gasoline tax column are included these city taxes—Albuquerque, & Roswell, 0.5c; Santa Fe, 1c. Texas 4c state tax applies within city limits of Texarkana, Ark.; Okla. 5.5c state tax applies within city limits of Ft. Smith, Ark.
†To consumers & dealers.
Discounts: To dealers only—Cheyenne 1.5c on Bronz-z-z & Demand.

S. O. California

Standard Gasoline (*Regular Grade*)
Flight Gasoline (*Third Grade*)

	Standard Posted Net Tank Truck	Standard Posted Re-tail	Flight Posted Net Tank Truck	Flight Posted Re-tail	Gaso-line Taxes
San Francisco, Cal.	10	14	9	12	4.5
Los Angeles, Cal.	9.5	13.5	8.5	11.5	4.5
Fresno, Cal.	11	15	10	13	4.5
Phoenix, Ariz.	12	16	10	13	6.5
Reno, Nev.	12	16	11	14	5.5
Portland, Ore.	10.5	14.5	9.5	12.5	6.5
Seattle, Wash.	10.5	14.5	9.5	12.5	6.5
Spokane, Wash.	12.5	16.5	11.5	14.5	6.5
Tacoma, Wash.	10.5	14.5	9.5	12.5	6.5

	Std. Aviation 73 Posted Net Tank Truck	Gasoline Taxes	Kerosine Tank Truck
San Francisco, Cal.	12.5	4.5	11.5
Los Angeles, Cal.	12	4.5	10
Fresno, Cal.	13.5	4.5	12.5
Phoenix, Ariz.	14.5	6.5	12.5
Reno, Nev.	14.5	5.5	13.5
Portland, Ore.	13	6.5	13.5
Seattle, Wash.	13	6.5	13.5
Spokane, Wash.	16	6.5	16.5
Tacoma, Wash.	13	6.5	13.5

Discounts:
To Resale & Commercial Consumers, tank car deliveries 0.25c off posted net tank truck price. Deliveries less than 40 gallons to commercial consumer trade, 4c above posted net tank truck price for Standard and Standard Aviation, 3c above for Flight, except single deliveries to Marine trade only which are billed at posted net tank truck price.

Kerosine—Tank car and truck & trailer deliveries, 3c off posted tank truck price; plant stem deliveries to jobbers, 2.5c off posted tank truck price.

Canada

PRICES OF IMPERIAL OIL, LTD.
Per Imperial Gallon, which is 1.2 U. S. Gallons
3-Star Imperial Gasoline (*Regular Grade*)

	†Gasoline T.W.	*Gasoline Taxes	†Kero-sine T.W.
Hamilton, Ont.	17.5	11	18
Toronto, Ont.	17.5	11	18
Brandon, Man.	21	10	23
Winnipeg, Man.	20.5	10	22.5
Regina, Sask.	18	10	20
Saskatoon, Sask.	20.8	10	22.8
Edmonton, Alta.	18.9	10	20.9
Calgary, Alta.	16	10	18
Vancouver, B. C.	15	10	24
Montreal, Que.	17	11	17.5
St. John, N. B.	16.5	13	19
Halifax, N. S.	16.5	13	19

*Includes 3c Federal, and Provincial taxes.
†To divided & undivided dealers.

Tank Wagon Price Changes
(These changes have been made in price tables)

Atlantic Refining—White Flash Gasoline:
Brunswick and Jacksonville dealer up 0.5c Nov. 3.

S. O. Kentucky—Crown and Standard Gasolines:
Prices up 0.5c generally throughout territory Nov. 3.

S. O. Indiana—Stanolind Gasoline:
Evansville dealer up 0.5c Nov. 4.

Above prices include these inspection fees on both gasoline and kerosine unless otherwise specified, per gallon:
Alabama 1/40c on gasoline, 1/2c on kerosine; Arkansas 1/20c; Florida 1/8c; Illinois 3/100c; Indiana 1/5c in lots of 25 bbls. or less, 2/25c in lots of more than 25 bbls.; Kansas 1/50c; Louisiana 1/32c; Minnesota 7/200c; Missouri 1/50c; Nebraska 3/100c; Nevada, gasoline 1/20c; North Carolina 1/4c; North Dakota 1/20c; Oklahoma 2/25c; South Carolina 1/8c; South Dakota 1/20c; Tennessee 2/5c; and Wisconsin 3/100c.
Kerosine inspection fees only: Iowa 3/50c; Michigan 1/5c per gal.

CRUDE OIL PRICES

Prices in $ per bbl. of 42 U. S. gals. at the well. A. P. I. gravity. Prices are effective as of 7 a. m. of dates shown.

EASTERN & CENTRAL STATES FIELDS

PENNSYLVANIA GRADE

Posted by Jos. Seep Purch. Agency (Aug. 23, '41)
Bradford-Allegany $2.75
Southwest Penna. $2.40
Eureka (West Va.) $2.34
Corning, O. (May 27, '41) $1.31

Posted by The Pennzoil Co. (Aug. 23, '41)
National Transit $2.68*

Posted by Valvoline Pipe Lines (Aug. 23, '41)
Bradford (Elk & McKean Counties, Pa.) $2.75
Warren, Forest, Venango, Clarion & Butler Counties, Pa. $2.68
Alleghany, Beaver, Washington & Greene Counties, Pa. $2.40
West Virginia $2.34
Southeastern Ohio $2.30

*Applies to Cochran, Franklin, Hamilton & Doolittle districts; prices in other lower districts range down to $2.63 per bbl. at well.

MICHIGAN

Posted by Pure Oil Co. (May 27, '41)
Midland, Midland County $1.44
Sherman $1.39

Posted by Simrall Corp. (May 27, '41)
Greendale, Porter, Vernon, Crystal & Wise $1.44
Buckeye, Bentley, Edenville, Beaverton & Monitor (sweet crude type) $1.42
Freeman, Redding, Lincoln & Winterfield $1.39
West Branch-Arenac $1.24
Hamilton-Grout $1.29

Posted by Sohio Corp. (Mich. Div.)
Traverse crude in Allegan, Kent, Ottawa & Van Buren Cos. (June 2, '41) $1.45
Trenton crude, Monroe Co. (June 2, '41) $1.39

Posted by Bay Pipe Line Corp. (May 27, '41)
Saginaw & Wise $1.44
Buckeye, Bentley & Kawkawlin $1.42
Clare $1.11
Adams (June 1, '41) $1.27

ILLINOIS-INDIANA-KENTUCKY-OHIO

Posted by Sohio Corp. (May 21, '41)
Illinois Basin, including Griffin pool $1.37
Carmi Storms, Ill. area $1.32
Birk City, Ky. area $1.32
Corydon, Ky. area, Henderson $1.32

Posted by Ohio Oil Co. (May 21, '41)
Illinois Basin $1.37
Eastern Ill. & Western Ind. 1.22

Posted by Carter Oil Co. (May 21, '41)
Louden, Fayette Co. Ill. $1.37

Posted by Mohawk Oil Lines, Inc. (May 21, '41)
Southern Illinois $1.37

Posted by Ashland Oil & Transp. Co.
Somerset oil in Ash. Lines, Ky.; (June 19, '41)
Big Sandy River $1.38
Kentucky River $1.43

Posted by Owensboro-Ashland Co.
Owensboro, Ky. area (May 21, '41) $1.32

Posted by S. O. Ohio (Sept. 1, '41)
Lima, O. $1.25
Cleveland, Lodi & Chatham (O.) areas $1.30

MID-CONTINENT

OKLAHOMA-KANSAS-NORTH TEXAS

(See below for companies posting and dates)

Gravity	Schedule No. 1	Schedule No. 2	Schedule No. 3	Schedule No. 4
Below 21	$0.85	$0.75	$0.70	$0.78
21-21.9	.87	.78	.73	.80
22-22.9	.89	.81	.76	.82
23-23.9	.91	.84	.79	.84
24-24.9	.93	.87	.82	.86
25-25.9	.95	.90	.85	.88
26-26.9	.97	.93	.88	.90
27-27.9	.99	.96	.91	.92
28-28.9	1.01	.99	.94	.94
29-29.9	1.03	1.02	.97	.96
30-30.9	1.05	1.05	1.00	.98
31-31.9	1.07	1.07	1.02	1.00
32-32.9	1.09	1.09	1.04	1.02
33-33.9	1.11	1.11	1.06	1.04
34-34.9	1.13	1.13	1.08	1.06
35-35.9	1.15	1.15	1.10	1.08
36-36.9	1.17	1.17	1.12	1.10
37-37.9	1.19	1.19	1.14	1.12
38-38.9	1.21	1.21	1.16	1.14
39-39.9	1.23	1.23	1.18	1.16
40 & above	1.25	1.25	1.20	1.18

Above schedules posted by:

No. 1: **S. O. Indiana** May 20, '41 in Okla. & Kans. **Sinclair-Prairie** May 20, '41 in Okla. & Kans., Nov. 6, '41 in N. Central Tex., beginning with 25-25.9. **Continental** May 19, '41 in Okla. & Kans., Nov. 6, '41 in N. Tex., beginning with Below 29 at $1.01. **Texaco** May 19, '41 in Okla. & Kans. beginning with 28-28.9. **Magnolia** Nov. 6, '41 in N. & N. Central Tex., beginning with Below 29 at $1.01.

No. 2: **Carter** May 20, '41 in Okla. **Shell** May 19, '41 in Okla. & Kans. (exclusive of Carter Co., Okla.) **Magnolia** May 21, '41 in Okla.

No. 3: **Shell** May 19, '41 in Carter Co., Okla.

No. 4: **Stanolind** May 20, '41 in N. Tex. **Texaco** May 21, '41 in N. & N. Central Tex., beginning with 28-28.9.

TEXAS & NEW MEXICO FIELDS

Posted by Humble Oil & Refining Co.

(May 21, '41, except Panhandle, Tex. July 9, '41)

Gravity	Refugio	Texas Gulf Coast	Mirando	Anahuac	Dickinson	East Central Texas	West Central Texas	Panhandle, Texas	W. Texas & New Mex.	Hawkins Texas
Below 20	$1.08	$1.06	$1.03	$0.98	$0.93	....	....	$0.73	$0.70	$0.80
20-20.9	1.10	1.08	1.05	1.00	.95	....	....	.75	.72	.82
21-21.9	1.12	1.10	1.07	1.02	.97	....	....	.77	.74	.84
22-22.9	1.14	1.12	1.09	1.04	.99	....	....	.79	.76	.86
23-23.9	1.16	1.14	1.11	1.06	1.01	....	....	.81	.78	.88
24-24.9	1.18	1.16	1.13	1.08	1.03	....	....	.83	.80	.90
25 & above	....	....	....	....	....	....	....	....	....	.92
25-25.9	1.20	1.18	1.15	1.10	1.05	$0.97	$0.88	.85	.82	....
26-26.9	1.22	1.20	1.17	1.12	1.07	.99	.90	.87	.84	....
27-27.9	1.24	1.22	1.19	1.14	1.09	1.01	.92	.89	.86	....
28-28.9	1.26	1.24	1.21	1.16	1.11	1.03	.94	.91	.88	....
29-29.9	1.28	1.26	1.23	1.18	1.13	1.05	.96	.93	.90	....
30-30.9	1.30	1.28	1.25	1.20	1.15	1.07	.98	.95	.92	....
31-31.9	1.32	1.30	1.27	1.22	1.17	1.09	1.00	.97	.94	....
32-32.9	1.34	1.32	1.29	1.24	1.19	1.11	1.02	.99	.96	....
33-33.9	1.36	1.34	1.31	1.26	1.21	1.13	1.04	1.01	.98	....
34-34.9	1.38	1.36	1.33	1.28	1.23	1.15	1.06	1.03	1.00	....
35-35.9	1.40	1.38	1.35	1.30	1.25	1.17	1.08	1.05	1.02	....
36-36.9	1.42	1.40	1.37	1.32	1.27	1.19	1.10	1.07	1.04	....
37-37.9	1.44	1.42	1.39	1.34	1.29	1.21	1.12	1.09	1.06	....
38-38.9	1.46	1.44	1.41	1.36	1.31	1.23	1.14	1.11	1.08	....
39-39.9	1.48	1.46	1.43	1.38	1.33	1.25	1.16	1.15	1.10	....
40 & above	1.50	1.48	1.45	1.40	1.35	1.27	1.18	1.15	1.12	....

Refugio: Includes crude purchased in East White Point, Greta, Melon Creek, O'Connor-McFaddin, Plymouth, Saxet, Taft, & Tom O'Connor fields.

Texas Gulf Coast: Includes crude purchased in Amelia, Clear Lake, Goose Creek, Hastings, Magnet, Mykawa, Mykawa New, Raccoon Bend, South Thompsons, Sugarland, Thompsons, & Webster fields.

Mirando: Includes crude purchased in Blanchard, Bridwell, Colorado, Comitas, Eagle Hill, Escobas, Fitzsimmons, Glen, Government Wells (North & South), Heyser, Hoffman, Kelsey, Kohler, Loma Novia, Lundell, Manila, Mirando Valley, Placedo, Randado, Sarnosa, & Tesoro fields.

Anahuac: Includes crude purchased in Anahuac, Angleton, Cedar Point, Fishers' Reef, Hull (Old & New), Pierce Junction, Red Fish Reef, & Turtle Bay fields.

Dickinson: Includes crude purchased in Dickinson, Gillock, Hardin, League City, & Rowan fields.

East Central Texas: Includes crude purchased in Anderson, Cherokee, Limestone, & Navarro Counties, and Navarro Crossing field.

West Central Texas: Includes crude purchased in Brown, Callahan, Comanche, Eastland, Fisher, Haskell, Jones, Shackelford, Stephens, & Throckmorton Counties.

Panhandle, Texas: Includes crude purchased in Carson, Gray, Hutchinson & Wheeler Counties.

West Texas & New Mexico: Includes crude purchased in Andrews, Crane, Crockett, Ector, Gaines, Glasscock, Howard, Reagan, Upton, Winkler, & Yoakum Counties, Texas; Lea County, N. M.

Hawkins: Includes crude purchased in Hawkins Field, Wood County, Texas.

Conroe $1.43
Tomball 1.40
Van 1.08
Talco 0.79

East Texas & Flag Lake $1.25
Flour Bluff, E. Flour Bluff 1.33
Salt Flat, N. Salt Flat 1.14
Darst Creek, Hilbig, Carroll 1.14

Clark, Zoboroski $1.14
Alice, Benavides (N. Sweden), Sun. .. 1.35
Ben Bolt, Clark-Muil, Tom Graham .. 1.35
Yates (Pecos) 0.95
La Rosa 1.33

MAGNOLIA PETROLEUM CO.

(May 21, '41)

Panhandle, Tex.—(July 9, '41)—Same as Humble except Magnolia begins with Below 29 at $0.91.

West Texas—In Crane, Upton, Howard, Glasscock, Mitchell, Winkler, Cochran, Hockley, Yoakum & Gaines Cos.—Same as Humble except Magnolia begins with Below 25 at $0.80.

N. Mexico—In Lea Co.—Same as Humble except Magnolia begins with Below 25 at $0.80 & ends with 36 & above at $1.04.

Cass & Panola Cos., Tex.—Below 25 at $0.88, plus 2c per degree of gravity to 40 & above at $1.20.

Mirando, Tex.—Same as Humble.

East Texas $1.25
Darst Creek 1.14
Luling 1.05
Talco ..... .79
Lytton Springs .. $1.17
Cleveland-Liberty Co. 1.26
Tomball 1.40

SINCLAIR-PRAIRIE OIL MARKETING CO.

Texas Panhandle—(May 23, '41)—Same as Humble except Sinclair-Prairie begins with Below 25 at $0.83.

West Texas & New Mexico—(May 30, '41)—Same as Humble except Sinclair-Prairie begins with Below 25 at $0.80.

Texas Gulf Coast—(May 21, '41)—Same as Humble.

Mexia District, Texas—(May 30, '41)—Same as Humble, East Central Texas, except Sinclair-Prairie also posts Below 25 at $0.95.

East Texas—(May 21, '41) $1.25
Long Lake, Texas—(May 21, '41) 1.23

STANOLIND OIL PURCHASING CO

(May 21, '41)

Clinton, Tex.—Same as Humble Tex. Gulf Coast except Stanolind begins with Below 21 at $1.08.

Fairbanks, N. Houston & Rosslyn, Tex.—Same as Humble Dickinson schedule.

E. Texas .. $1.25 **Satsuma & Tomball, Tex.** $1.40

STANOLIND OIL & GAS CO.

(May 21, '41)

W. Beaumont & Spindletop (Jefferson Co., Tex.) **& High Island** (Galveston Co., Tex.)—Same as Humble Tex. Gulf Coast.

Hendrick & Henderson (Winkler Co., Tex.)—Same as Humble Panhandle except Stanolind begins with Below 26 at $0.82.

THE TEXAS CO.

(May 21, '41)

Panhandle, Tex.—Same as Humble except Texaco begins with 34-34.9 at $1.03.

W. Texas & Lea Co., N. M.—Same as Humble except Texaco posts $0.78 for 23.9 & below and ends with 36 & above at $1.04.

Texas Gulf Coast—Same as Humble except Texaco ends with 34 & above at $1.36.

Duval, Mirando, Tex.—Same as Humble Mirando except Texaco ends with 28-28.9 at $1.21.

Refugio, Tex.—Same as Humble except Texaco ends with 28-28.9 at $1.26.

East Texas $1.25
Darst Creek, Tex. 1.14
Hockley & Cochran Cos., Tex. ..... .87
Cass Co., Tex. $1.20
Conroe, Tex. 1.43

SHELL OIL CO., INC.

(May 20, '41)

West Texas & Lea Co., N. M.—Same as Humble except Shell ends with 36 & above at $1.04.

Fisher Co., Tex.—Same as Humble W. Central Texas except Shell begins with Below 25 at $0.86.

East Texas $1.25
Livingston field, Polk Co., Tex. 1.25
Pecos Co., Tex., except Yates Shallow pool .. $0.95
Pecos Co., Yates Shallow pool ..... .82

CONTINENTAL OIL CO.

Carson & Hutchinson Cos., Tex.—(July 9, '41)—Same as Humble Panhandle except Continental begins with Below 29 at $0.91.

Mirando, Tex.—(July 1, '41)—Same as Humble.

Wade City & Clara Driscoll, Tex.—(July 1, '41)—Same as Humble Refugio.

Alfred & Magnolia City, Tex.—(May 21, '41), $1.35.

Eddy Co., N. M.—(May 30, '41)—Same as Humble N. M. schedule except Continental begins with Below 29 at $0.88.

PAN AMERICAN PRODUCTION CO.

(May 21, '41)

Hastings & S. Houston, Tex.—Same as Humble Tex. Gulf Coast except Pan Am. begins with Below 21 at $1.08.

Gillock, Tex.—Same as Humble Dickinson except Pan Am. begins with Below 21 at $0.95.

East Texas $1.25
Cayuga, Tex. ..... .90

CRUDE OIL PRICES

Prices in $ per bbl. of 42 U. S. gals. at the well. A. P. I. gravity. Prices are effective as of 7 a. m. of dates shown.

CALIFORNIA

Posted by S. O. California, May 23, 1941

(All gravities above those quoted take highest price offered in that field)

Gravity	Signal Hill (Long Beach)	Wilmington	El Segundo	Seal Beach	Huntington Beach	Inglewood	Olinda Brea Canon	Athens-Rosecrans	Torrance	Richfield	Whittier East Coyote (La Habra)	Montebello	West Coyote Hills	Santa Fe Springs	Greeley, Canal, Wasco	Coles Levee	Mountain View	Elk Hills, Buena Vista Hills, Midway-Sunset, Lakeview Area	Lost Hills	Coalinga	Gravity
14-14.9	....	$0.68	....	....	$0.71	....	$0.70	....	$0.70	$0.70	$0.70	$0.72	....	....	....	....	....	$0.73	$0.73	$0.73	14-14.9
15-15.9	....	.71	....	....	.75	$0.76	.72	....	.72	.71	.72	.72	....	....	....	....	....	.73	.73	.73	15-15.9
16-16.9	....	.74	$0.79	....	.79	.79	.75	....	.74	.73	.75	.72	....	....	....	....	....	.73	.75	.73	16-16.9
17-17.9	....	.78	.82	....	.82	.82	.78	....	.77	.76	.78	.72	....	....	....	....	....	.75	.78	.73	17-17.9
18-18.9	$0.80	.82	.86	....	.86	.85	.81	....	.80	.79	.82	.74	....	....	....	....	....	.78	.81	.73	18-18.9
19-19.9	.84	.86	.90	....	.89	.88	.85	....	.83	.82	.85	.77	....	....	....	....	$0.73	.81	.84	.75	19-19.9
20-20.9	.88	.90	.94	....	.93	.92	.88	....	.86	.85	.89	.80	....	....	....	....	.76	.85	.87	.77	20-20.9
21-21.9	.92	.94	.98	....	.96	.95	.91	....	.89	.89	.92	.84	....	....	....	....	.79	.90	.90	.80	21-21.9
22-22.9	.96	.98	1.02	$0.88	.99	.98	.95	....	.93	.93	.96	.87	....	....	....	....	.83	.94	.93	.83	22-22.9
23-23.9	1.00	1.02	1.05	.92	1.02	1.01	.98	....	.97	.98	1.00	.91	....	....	....	....	.87	.99	.96	.86	23-23.9
24-24.9	1.03	1.06	1.07	.97	1.05	1.04	1.01	....	1.01	1.02	1.03	.94	$0.99	....	....	....	.90	1.03	.99	.89	24-24.9
25-25.9	1.07	1.09	1.10	1.01	1.08	1.07	1.04	....	1.05	1.06	1.07	.98	1.02	....	....	....	.94	1.07	1.01	.92	25-25.9
26-26.9	1.11	1.12	1.12	1.06	1.11	1.10	1.08	....	1.09	1.10	1.11	1.01	1.06	....	....	....	.97	1.11	1.04	.95	26-26.9
27-27.9	1.15	1.15	1.15	1.10	1.14	1.14	1.11	....	1.13	....	1.15	1.05	1.10	$1.04	....	....	1.01	1.15	1.07	.98	27-27.9
28-28.9	1.18	1.18	1.17	1.15	1.17	1.17	1.14	....	1.17	....	....	1.08	1.13	1.08	....	....	1.04	1.19	1.10	1.00	28-28.9
29-29.9	1.20	1.21	....	1.19	1.20	1.20	....	$1.17	....	....	....	1.12	1.17	1.12	....	....	1.07	1.24	1.13	1.02	29-29.9
30-30.9	1.23	1.24	....	....	1.23	1.22	....	1.21	....	Elwood	....	1.15	1.21	1.15	$1.01	$1.09	1.10	1.28	1.16	1.04	30-30.9
31-31.9	....	....	....	....	....	1.24	....	1.25	....	Terrace	....	1.19	1.24	1.19	1.04	1.12	1.14	....	....	1.06	31-31.9
32-32.9	....	....	....	....	....	....	....	1.29	....	F.o.b. Ship	....	1.23	1.28	1.23	1.07	1.14	1.17	....	....	1.09	32-32.9
33-33.9	....	....	....	....	....	....	....	1.32	....	$1.22	....	1.27	....	1.26	1.10	1.17	....	....	....	1.11	33-33.9
34-34.9	Kettleman Hills			....	....	....	....	1.36	....	1.25	....	1.31	....	1.30	1.13	1.20	....	....	....	1.13	34-34.9
35-35.9	....	$1.23	....	....	....	....	....	....	....	1.28	....	1.35	....	....	1.16	1.22	....	....	....	....	35-35.9
36-36.9	....	1.26	....	....	....	....	....	....	....	....	....	1.39	....	....	1.19	1.25	....	....	....	....	36-36.9
37-37.9	....	1.29	....	....	....	....	....	....	....	....	....	1.43	....	....	1.22	....	....	....	....	....	37-37.9
38-38.9	....	....	....	....	....	....	....	....	....	....	....	1.47	....	....	1.25	....	....	....	....	....	38-38.9
39-39.9	....	....	....	....	....	....	....	....	....	....	....	1.51	....	....	....	....	....	....	....	....	39-39.9
40-40.9	....	....	....	....	....	....	....	....	....	....	....	1.53	....	....	....	....	....	....	....	....	40-40.9

Playa Del Rey: (FOB Standard Pipe Line) 20-20.9, $0.80; 21-21.9, $0.84; 22-22.9, $0.87.
Wheeler Ridge: 22-22.9, $0.76; 23-23.9, $0.80; 24-24.9, $0.83.
Newhall, Kern River, Kern Front, McKittrick & Round Mountain: 14-14.9 $0.73.

LOUISIANA-ARKANSAS

Posted by S. O. Louisiana, May 22, '41

Gravity	Atlanta, Ark. et al.	De Soto, La. et al.	Rodessa, La. et al.	Bunkie, La. et al.	Darrow, La. et al.	University, La. (Baton Rouge)
40 & above	$1.08	$1.18	$1.20	$1.30	$1.30	....
39-39.9	1.06	1.16	1.18	1.28	1.28	....
38-38.9	1.04	1.14	1.16	1.26	1.26	....
37-37.9	1.02	1.12	1.14	1.24	1.24	....
36-36.9	1.00	1.10	1.12	1.22	1.22	....
35-35.9	.98	1.08	1.10	1.20	1.20	....
35 & above	....	....	....	....	....	$1.36
34-34.9	.96	1.06	1.08	1.18	1.18	1.34
33-33.9	.94	1.04	1.06	1.16	1.16	1.32
32-32.9	.92	1.02	1.04	1.14	1.14	1.30
31-31.9	.90	1.00	1.02	1.12	1.12	1.28
30 & below	....	....	....	....	....	1.26
30-30.9	.88	.98	1.00	1.10	1.10	....
29-29.9	.86	.96	.98	1.08	1.08	....
28-28.9	.84	.94	.96	1.06	1.06	....
27-27.9	.82	.92	.94	1.04	1.04	....
26-26.9	.80	.90	.92	1.02	1.02	....
25-25.9	.78	.88	.90	1.00	1.00	....
Below 25	....	.86	.88	.98	....	....
24-24.9	.76	....	.88	....	.98	....
23-23.9	.74	....	.86	....	.96	....
22-22.9	.72	....	.84	....	.94	....
21-21.9	.70	....	.82	....	.92	....
Below 21	.68	....	.80	....	.90	....

Atlanta schedule includes Buckner, Lewisville, Magnolia, Village & Schuler (Jones Sand), Ark.

De Soto schedule includes Sabine, Fouke, Homer, Miller Co., Nebo & Sugar Creek.

Rodessa schedule includes Cotton Valley & Shreveport (Cross Lake) ending with Below 25 at $0.88; Anse La Butte (Aug. 1, '41); Caddo (Oct. 15, 1941).

Bunkie schedule includes Eola, Olla, & South Olla.

Darrow schedule includes Bayou Mallet, Choctaw, Jeanerette, Lirette, N. & S. Crowley, Port Allen, Port Barre, Potash, Roanoke, & St. Martinville.

Big Creek, Dorcheat, McKamie Distillates (Sour).....$1.15
Heavy Smackover Crude.....83
Cotton Valley Distillate (Sept. 1, '41).....1.40
Cotton Valley (Holloway Sand Crude).....1.25
Lisbon Distillate.....1.20

(Continued next column)

LOUISIANA-ARKANSAS (Cont'd)

Posted by Shell Oil Co., Inc. (May 20, '41)

Gravity	Iowa	Roanoke	Gibson
Below 20	$0.99	$0.94	$0.89
20-20.9	1.01	.96	.91
21-21.9	1.03	.98	.93
22-22.9	1.05	1.00	.95
23-23.9	1.07	1.02	.97
24-24.9	1.09	1.04	.99
25-25.9	1.11	1.06	1.01
26-26.9	1.13	1.08	1.03
27-27.9	1.15	1.10	1.05
28-28.9	1.17	1.12	1.07
29-29.9	1.19	1.14	1.09
30-30.9	1.21	1.16	1.11
31-31.9	1.23	1.18	1.13
32-32.9	1.25	1.20	1.15
33-33.9	1.27	1.22	1.17
34 & above	1.29	1.24	1.19

Iowa schedule includes Black Bayou & White Castle, La. fields.

Roanoke schedule includes Chalkley, La. field.

Gibson schedule includes S. Houma, Hester & W. Lake Verret, La. fields.

Happytown field, St. Martin Par., La.....$1.15

Posted by Arkansas Fuel Oil Corp.
Urania, La. (May 22, '41).....$1.15

Posted by Continental Oil Co. (May 21, '41)
Tepetate, La.....$1.18
Ville Platte, La.....1.20
Lake Arthur, La.....1.18
Ritchie, La. (Sept. 1, '41).....1.08

Abbeville, La.

Below 36 $1.07	37-37.9 $1.11	39-39.9 $1.15
36-36.9 1.09	38-38.9 1.13	40 & above 1.17

CANADIAN FIELDS

Posted by Imperial Oil Limited

Western Ontario (Nov. 6, 1939)

Petrolia	$2.10	Oil Springs	$2.17

Turner Valley Crude Oil (July 16, '41)
(Prices FOB producer's tankage)

33-33.9 $1.35	44-44.9 $1.57	55-55.9 $1.79	
34-34.9 1.37	45-45.9 1.59	56-56.9 1.81	
35-35.9 1.39	46-46.9 1.61	57-57.9 1.83	
36-36.9 1.41	47-47.9 1.63	58-58.9 1.85	
37-37.9 1.43	48-48.9 1.65	59-59.9 1.87	
38-38.9 1.45	49-49.9 1.67	60-60.9 1.89	
39-39.9 1.47	50-50.9 1.69	61-61.9 1.91	
40-40.9 1.49	51-51.9 1.71	62-62.9 1.93	
41-41.9 1.51	52-52.9 1.73	63-63.9 1.95	
42-42.9 1.53	53-53.9 1.75	64 & over 1.97	
43-43.9 1.55	54-54.9 1.77		

Absorption Gasoline (July 16, '41)
90% Rec., 20 lb. Reid v.p.....$2.28
90% Rec. 17 lb. Reid v.p.....2.44

ROCKY MOUNTAIN FIELDS

Posted by Stanolind Oil & Gas Co. (May 20, '41)

Salt Creek (except Tensleep crude), Midway & Dutton Creek, Wyo.

Below 29 $0.96	32-32.9 $1.04	36-36.9 $1.12
29-29.9 .98	33-33.9 1.06	37-37.9 1.14
30-30.9 1.00	34-34.9 1.08	38-38.9 1.16
31-31.9 1.02	35-35.9 1.10	39-39.9 1.18
		40 & above 1.20

Wyoming:		Wyoming:	
Tensleep Crude	$0.6785	Grass Creek Light	$1.00
Frannie Light	.70	Grass Creek Heavy	.50
Frannie Heavy	.47	Elk Basin	1.00
Hamilton Dome	.45	Iles, Colo.	1.07

Posted by Ohio Oil Co. (May 20, '41)

Elk Basin, Wyo.	$1.00
Grass Creek, Wyo., Light	1.00
Rock Creek, Wyo.	1.15
Lance Creek, Wyo., (July 1, '41)	1.12

Posted by Continental Oil Co. (May 21, '41)
Ft. Collins & Wellington, Col.

Below 29 $0.96	32-32.9 $1.04	36-36.9 $1.12
29-29.9 .98	33-33.9 1.06	37-37.9 1.14
30-30.9 1.00	34-34.9 1.08	38-38.9 1.16
31-31.9 1.02	35-35.9 1.10	39-39.9 1.18
		40 & above 1.20

Canon City & Florence, Col.	$1.05	Big Muddy Wyo., (May 30, '41)	$1.08
Cat Creek, Mont.	1.15	Lance Creek, Wyo., (July 1, '41)	$1.12

Posted by Independent Pipe Line Co. (Aug. 1, '41)

Falls City, Neb., field price	$0.90
Falls City, Neb., loaded in tank cars	0.95
Shubert, Neb., loaded in tank cars	0.97

CLASSIFIED

Address all Blind Box Number ads to National Petroleum News, 530 Penton Building, Cleveland, Ohio, unless otherwise specified.

Positions Wanted

Development Control Specialized Sales (Petroleum). Ten years experience including selection of raw materials, purchasing, supervision quality control and processing. Broad experience in specialized sales and equipment installation. Desire connection where executive ability backed by diversified training and experience may be utilized. Box No. 983.

Petroleum Chemist, Podbielniak operator, M. S. degree, six years experience, thorough knowledge petroleum refining, wishes position in petroleum work. Please reply, **Box No. 984.**

Wanted to Buy

3,000 to 3,500-gallon Semi-trailer with one to three compartments. Must be in good condition. Box No. 986.

Classified Rates

"For Sale," "Wanted to buy," "Help Wanted," "Business Opportunities," "Miscellaneous" classifications, set in type this size without border—10 cents a word. Minimum charge, $3.00 per insertion.

"Position Wanted"—5 cents a word Minimum charge $1.00 per insertion.

Advertisements set in special type or with border—$4.00 per column inch

Copy must reach us not later than Saturday preceding date of issue.

All advertisements carried on this page are payable in advance.
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Situation Open

Refinery Engineer for design and construction work. Medium sized growing plant in middle west. Box No. 978.

Designers for oil refinery piping, also structural and concrete. Must be thoroughly experienced this class of work. State fully first letter salary desired, complete detail of your experience, age and when services available. Arthur G. McKee & Company, 2300 Chester Avenue, Cleveland, Ohio.

For Sale

Tanks: three 100,000 and one 325,000 gallons; piping, valves, meters, etc. On water front in Philadelphia. Box No. 977.

Truck Tanks: One 600 gallon three compartment. One 575 gallon four compartment. For information write O. W. Stewart, Box 345, Boone, Iowa.

Fruehauf 3750 gallon transport trailer with 1075 by 20 tires. Unit in good condition. Used only eighteen months. Box No. 985.

Lubricating oil and grease business, made 40% on selling price first nine months this year. Will take $50,000 cash to handle. No indebtedness. 10-year established business. Box No. 987.

For Immediate Delivery

Two new 26 lb. natural gasoline storage tanks of 25,000 gallons capacity each, 10' diameter by 40' long shell with hemispherical heads, complete with 3' high support saddles, all necessary connections, tanks built in accordance API-ASME code of new material in September 1941, have never left fabricating plant and may be inspected before shop painted. Price f.o.b. Shreveport, Louisiana $3,100.00 each.

Box No. 982

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Specialists on Petroleum Products
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NEWARK, N. J.
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· PERSONALS ·

R. A. Broomfield

The man who Barnsdall Oil Co. credits for the initiative and judgment behind the company's discovery of 7 new oil fields retired Oct. 31 from active service. He's **R. A. Broomfield, Sr.,** Los Angeles, pioneer oil man in Texas, the Mid - Continent and California. In 1901, Mr. Broomfield joined the Guffey Petroleum & Refining Co. at Port Arthur, Tex., as treasurer; became associated with T. N. Barnsdall, founder of Barnsdall Oil Co., in 1903 and served in Pennsylvania and Mid-Continent fields until 1909 when he was appointed resident manager of Barnsdall's California properties. One of the organizers of the Oil Producers Agency of California, he has been a director since its inception and served as its president during the NIRA—November 1935 to April 1937. Since 1920 he has been a director of the Independent Petroleum Assn. of America; was elected a director of American Petroleum Institute in 1930.

* * *

W. C. Whaley

W. C. Whaley, who succeeded **R. A. Broomfield, Sr.,** as manager of Barnsdall's California properties on Nov. 1, got his start in the oil industry as a roustabout in the Coalinga field in 1911; later worked for various oil companies in Wyoming, Oklahoma, Texas, Montana, Kentucky and British West Indies. Since joining Barnsdall in 1924, he has been successively, a driller, drilling foreman, field superintendent, general superintendent and vice-president. He was named a director of the company in 1940. For the past 12 years, Mr. Whaley has been active in promoting voluntary conservation in the California oil industry. A member of the Conservation Committee of California Oil Producers and chairman of the allocation committee of that group, he was made a member of District 5's Production Committee last June.

* * *

E. G. Guy, Carson City, Mich., vice-president and general manager of Crystal Refining Co., took a late vacation this year to motor down to his home town, Erie, Kans., with his family and expects to be back in his office about the middle of November.

* * *

Congratulations and best wishes poured in on **H. R. Straight,** Bartlesville, president of Cities Service Oil Co., on his 67th birthday. The greetings came from oil field roughnecks, pipeliners, gaugers, clerical workers, other Cities Service employes and Mr. Straight's oil fraternity friends. The Cities Service president was born at Tidioute, Pa., in 1874, the son of **R. J. Straight,** prominent Pennsylvania producer. At Stanford he was hailed by sports writers as the greatest end on the Pacific Coast. He moved to Oklahoma in 1911 and in 1912 was made production manager of the Quapaw Gas Co. and Wichita Natural Gas Co., acquired at that time by the Henry L. Doherty interests. Mr. Straight located the Stapleton No. 1 well, discovery location for the El Dorado, Kans., field and in 1920 was made vice-president and general manager of Empire Gas & Fuel Oil Co. In 1920, he was elected director of Cities Service Oil Co. His election to the presidency of Cities Service Oil Co., Cities Service Gas Co. and Empire Pipe Line Co. was announced in 1937.

H. R. Straight

W. H. Eaton, Jr.

W. H. Eaton, Jr., former division manager of the Atlanta territory for Shell Oil Co., Inc., has been appointed general sales manager to head Shell's sales east of the Rocky Mountains, according to an announcement by **L. T. Kittinger,** vice-president in charge of marketing. Mr. Eaton started with Shell as an attorney in the company's Pacific Coast territory and was transferred in 1936 to St. Louis as assistant to the president. Later, he was advanced to manager of the company's transportation and supplies department. Following consolidation of the mid-west and eastern companies, Mr. Eaton was made division manager at Atlanta. He succeeds **Ralph H. Erichsen,** who has resigned.

Other personnel changes announced by Shell include appointment of **C. E. Smith,** formerly division manager at Baltimore, to head the office in charge of selection of college graduates for employment with the organization, appointment of **H. G. Swanson,** former Minneapolis division manager, as manager of the Chicago division to succeed **J. G. Sinclair,** present manager, who will take charge of the company's Indianapolis division; and appointment of **G. R. Monkhouse,** formerly Cleveland division sales manager, as manager of the Minneapolis division.

* * *

Charles O. Wilson, general sales agent and formerly manager of Indiana Standard's lubricating department, retired Nov. 1 on a company annuity.

* * *

Joseph E. Moorhead, executive manager of the Pennsylvania Grade Crude Oil Assn., has been appointed to the National Panel of Arbitrators of the American Arbitration Assn., according to announcement by the association's president Cornelius Vanderbilt Whitney. The Arbitration Assn., a non-profit organization with offices in 31 key cities, has over 8000 leading citizens who are available to act as arbitrators in commercial and industrial disputes.

Refining Technologists Play Important Part In Oil Industry Defense Program

By GEORGE B. MURPHY, Technical Editor NPN

SAN FRANCISCO, Nov. 7.—The main thought of refinery technical men and executives attending the American Petroleum Institute meeting here is the realization that normal product requirements must be secondary to the government's demand for fuels, lubricants and essential explosive chemicals from petroleum. As a result, all members of this branch and, in fact, all departments of the industry, are considering ways to gear themselves into the national defense program.

The technical personnel of companies called upon to tackle a new phase of research and development in the past, have been concerned mainly with the introduction of ideals to reduce manufacturing costs or to make improvements by increasing the yield and quality of standardized products. In their new objective, they must stand ready to advise the management, not only upon the economics, but also upon the overall refinery feasibility of the many new processes being proposed to manufacture essential wartime products.

In this early period of defense preparations, the established technical departments of oil companies can serve management well. They have a background of data from the company's experience to call upon and the training in fundamental principles of economics, chemistry and engineering to apply to problems of this type now presented. Unwise plant expenditures are no more justified during critical national periods than in normal times. Each project requires thorough analysis in order to achieve the maximum overall efficiency that is needed. Paraphrasing the words of one speaker along this line:

Under such conditions there is a great tendency to advocate the disregard of economies in the great importance of all-out defense. It seems to me that the necessity for economic analysis is of greater importance now than ever before.

Refiners contacted at this A.P.I. meeting are indicating a keen co-operation with the government. For example, small as well as large companies are studying methods whereby they may contribute to the government's 100-octane aviation gasoline program. Petroleum Co-ordinator Ickes, in his address to oil men here, estimates that an output of this vital product of 100,000 bbls. a day can be achieved by Jan. 1, 1943, but he forecast that an additional 20,000 bbls. daily would be needed by that time. The other problem presented by Mr. Ickes—"to see that all necessary petroleum products are available in such quantities and of such types as may be necessary"—is also receiving considerable study by the technical men here.

However, the problem facing refiners is much wider than only the erection of plants to manufacture 100-octane gasoline. As PCO's Director of Marketing Dr. John W. Frey pointed out during his talk, it may be necessary to limit the quality of motor fuels for public use in the emergency by eliminating the sale of premium gasoline and by reducing the tetraethyl lead and butane allowable for regular grades.

In other words, the thought expressed by these speakers and concurred in by the oil men here, is that refining must be directed toward supplying what the government requires, rather than what the general public needs. This problem requires that the refining and automotive technologists co-operate in the utilization of a motor fuel for which present day cars were not designed, and in the realization that, after the war, fuels of much higher anti-knock quality will be demanding a market.

Executives and well-known technologists with oil companies, when interviewed here, in the majority of cases gave a similar opinion upon what characterized this A.P.I. meeting. The products most frequently mentioned were 100-octane gasoline and explosives. The industry is directing its efforts toward making synthetic products from petroleum which they have never before attempted. At this meeting, discussion of standard fuels and lubricants is relegated to the background for the first time since the last World War.

One well known chief chemist, when asked for his comment on the meeting said:

"National defense is the only national topic of this meeting". Another stated that, while technologists are

confronted with many new problems, they are not discouraged and are making progress. A lubricating oil specialist advised that, while there would be no shortage of motor oil, the priorities upon certain organic chemicals used in the manufacture of solvent refined lubricants might reduce their supply for civilian use.

A representative of a British refiner said his company is making 100-octane "aviation spirit" in appreciable quantities by an American method, as well as blending agents by the fractionation of pentanes and hexanes. Normally, hydrocarbons are isomerized. Toluene is obtained at this plant by solvent extraction with phenol.

One well known technologist of this country discussed the availability of raw materials from refiners for the explosives required of the war department. Toluol potential of 100,000 gals. per year is available, he said, by catalytic, solvent and fractional methods to make T.N.T., picric acid, ammonium nitrate, trinitroglycerine and other important explosives from petroleum, phenol, ammonia, nitric acid, sulphuric acid and glycerine, the raw materials for these, may all be obtained mainly from by-products sources, it was said.

Indications from this A.P.I. meeting are that the oil industry's technologists will meet this emergency as successfully as they have many others in the past.

Hoover Medal Awarded By Engineers to D. Robert Yarnall

Announcement has been made that D. Robert Yarnall, Mechanical Engineer of Philadelphia, Pa., has been selected as the fifth recipient of the Hoover Medal. The Medal will be presented to Mr. Yarnall during the Annual Meeting of The American Society of Mechanical Engineers in New York City, December 1-5, 1941, with the following citation:

"D. Robert Yarnall, humanitarian, engineer, and a leader in the engineering profession, who rendered outstanding service as a member of a mission that fed the children of Germany at the end of the World War and that is now aiding refugees in this country and Europe and providing food and relief for the children and mothers of France. These distinguished public services have earned for him the Hoover Medal for 1941."

The Hoover Medal is administered by the Hoover Medal Board of Award, consisting of representatives of the American Society of Civil Engineers, American Institute of Mining and Metallurgical Engineers, The American Society of Mechanical Engineers, and the American Institute of Electrical Engineers.

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New Laboratory Will House API Research Project 6

The National Bureau of Standards, Washington, is to provide new laboratories for the work on the isolation and identification of hydrocarbons in petroleum, which is being carried on co-operatively by the Bureau and the American Petroleum Institute, through API Research Project 6.

The new quarters, to be ready for occupancy in about a year, will include a laboratory room for housing precision apparatus, a distillation laboratory 15 by 15 ft. in area and 25 ft. high, for housing the distillation columns, with an adjoining servicing room; an extraction laboratory, consisting of a shaft 7.5 ft. square and 60 ft. high, with 5 landings, to accommodate the extraction equipment, and additional laboratory and work rooms.

API Research Project 6 is under the supervision of Frederick D. Rossini, in the section of the Bureau on Thermochemistry and Constitution of Petroleum, which is part of the Chemistry Division, headed by G. E. F. Lundell. In its 14 years of existence, the Project has determined a total of 62 hydrocarbons in the gasoline and kerosine fractions, together with a large number of "homogeneous" fractions from the lubricating oil portion of petroleum. The current work in the Project includes the isolation of hydrocarbons from the gasoline and kerosine fractions and a survey of the composition of gasoline fraction of various representative crudes.

The API advisory committee for Research Project 6 consists of J. Bennett Hill (chairman) Sun Oil Co.; William J. Sweeney, Standard Oil Development Co.; Seymour W. Ferris, Atlantic Refining Co.

Defense Requirements for Metal Discussed at A.I.C.E. Meeting

VIRGINIA BEACH, VA., Nov. 5—More than 400 chemical engineers and industrialists from all parts of the United States attended the thirty-fourth annual meeting of the American Institute of Chemical Engineers here on November 3-5, A. I. C. E. reports.

Program consisted of 3 days of scientific papers supplemented by a special session Monday afternoon on the mobilization of engineering materials for defense. Speakers at the defense session were Dr. E. R. Weidlein, chief of the Chemicals Section of OPM and director of Mellon Institute of Industrial Research, Pittsburgh, and R. E. McConnell, chairman of the Engineers Defense Board, New York.

Non-defense users of metals cannot look for relief from the increasing shortages of these materials "for a long time to come", according to Robert E. McConnell, who spoke on the current status of defense raw materials.

"With but few exceptions we have sufficient of all materials for military purposes," Mr. McConnell said, "but when normal requirements are added to these defense needs we find that we are short of practically all the metals and minerals, with metal shortages constituting the greater part of the problem. With emphasis on airplanes, bombs, tanks, trucks, artillery, anti-aircraft guns and machine guns, this war is a war of metals, and the problems it is creating in our normal economy are going to be with us for a long time."

In closing, Mr. McConnell injected a more hopeful note: "In a broad analysis of the problem of metal shortages there are 4 factors which may operate to give partial relief:

1. It is probable that some requirements have been overstated.
2. There are probably larger inventories throughout the country than we know about.
3. Production capacities are probably greater than estimated.
4. The effects of plans for nation-wide conservation, reclamation and substitution should somewhat relieve the pressure."

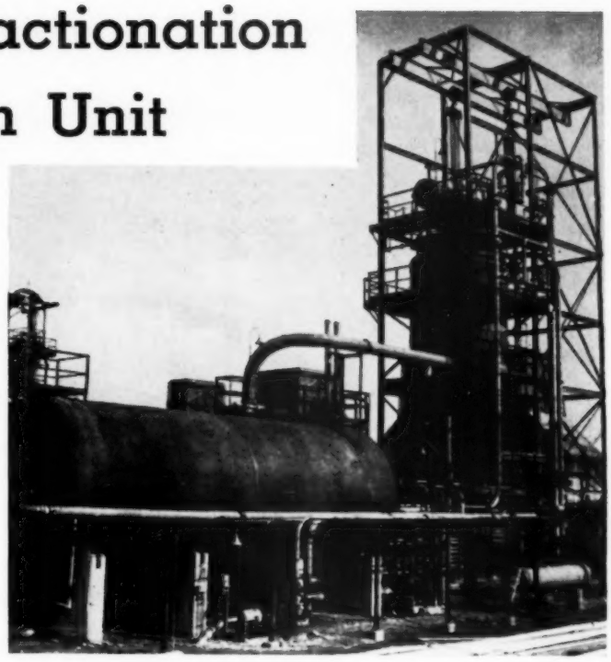
Precise Commercial Fractionation In 1000 Barrel Stedman Unit

By L. B. Bragg* and F. Morton†

This paper, presented before the division of refining of the American Petroleum Institute at San Francisco, California, Nov. 6, 1941, described the design and operation of a commercial fractionating unit utilizing a Stedman packing filled column 12 ft. in diameter and 16 ft. high, containing 7 ft. of packing.

The plant consists of a batch still installed in the refinery of the Trinidad Leaseholds Ltd., Trinidad, B. W. I. The results show that narrow boiling fractions can be obtained with a high degree of separation from large diameter and short height columns filled with Stedman packing.

Stedman packing is claimed to have particular application in fractionation when a large number of theoretical plates is required, since each foot of packing is equivalent to four theoretical plates. One set of data indicates that a naphtha cut (212-273° F.) might be separated to provide one fraction (219-250° F.) containing 34% of toluene (B.P. 231° F.).



Stedman packing unit

IN line with the trend of the industry toward closer and more exact fractionation, a distillation unit was desired that would be capable of producing a number of cuts from light petroleum distillates, each of relatively close boiling range and each quite well fractionated from its neighboring cuts. Following conventional practice, consideration was given first to the design of a continuous-distillation battery containing a number of bubble-tray towers.

The degree of fractionation specified, the number of cuts required, and the close boiling ranges called for made satisfactory control of a continuous battery doubtful. Temperature control seemed out of the question. In view of the number of cuts required, the fact that some of them amounted to only 5 or 6 per cent by volume of the feed stock, and as all cuts were to be fractionated closely, it appeared that rate-of-flow control would not be satisfactory, particularly as the composition of feed stock probably would vary.

Consideration, therefore, was given to the possibility of using batch distillation, which offered a better control and one that was independent of feed composition. Batch distillation also presented the possibility of using a low reflux ratio at the start of the taking of any cut and of increasing the reflux ratio as the distillation progressed, until the maximum reflux ratio was reached—near the end of the production of that cut. This permitted a considerable reduction in the average reflux ratio as compared to continuous distillation, which requires the use of maximum reflux ratio at all times. Such a reduction in the average reflux ratio effected corresponding reductions in the quantities of utilities used, in the diameter of the tower, and in the amount of heating and condenser surfaces required. The use of batch distillation also allowed wide variation in the boiling ranges and percentage yields of the several cuts and, with minimum changes, would permit a considerable increase in the number of cuts produced.

When using batch distillation, it is necessary that the "holdup" of the column and of all other parts of the unit handling distillate be reduced to the minimum. This is most important when exact fractionation is required and when some of the cuts represent a small percentage of the charge. As a consequence of this requirement, a bubble-tray column could not be used on account of the considerable liquid holdup of each tray. With the bubble-tray column eliminated, it was natural to turn to a packed column. This was followed by the decision to use Stedman packing, conical and triangular pyramid types of which have been described previously by Stedman[5 6 7 8‡] and by Bragg, [1 2 3 4] because this packing has a lower holdup than other packing of equivalent capacity and plate efficiency.

Description of Unit

The unit was designed to operate on a charge of debutanized light gasoline having an ASTM final boiling point of 248° F., and to separate this material into 7 overhead fractions and a still residue. The odd-numbered fractions were to contain substantially all the *iso*paraffins, naphthenes, and aromatics; whereas the even-numbered fractions and the residue were to contain substantially all the normal paraffins. The unit was to process 1,000 bbls. of the charging stock per day. A diagrammatic flow chart of the installation is shown in Fig. 1.

The unit consisted primarily of:

1. A still 15 ft. in diameter by 40 ft. long, arranged to be heated by internal steam coils, and capable of holding a working charge of 1,000 bbls. of feed stock.

2. A Stedman packed column consisting of a cylindrical steel outer shell 12 ft. 3 in. in diameter by 16 ft. long, in which was fitted a cast-steel hexagonal packing casing. The packing casing was 5 ft. 6 in. across the faces, 11 ft. across the diagonals, and the packed section was 7 ft. high.

The casing was packed in layers, each having 726 prism-shaped sections of 6-in. equi-lateral-triangular pyramid-type Stedman packing. The construction of the pack-

*Foster Wheeler Corp., New York, N. Y.
†Trinidad Leaseholds Ltd., Pointe-a-Pierre, Trinidad, B.W.I.

‡Figures refer to bibliography at end of article.

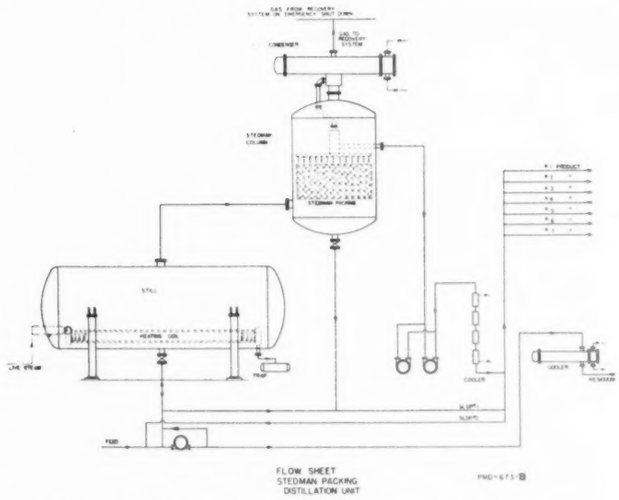


Fig. 1. Flow sheet of Stedman packing distillation unit

ing may be visualized by reference to Fig. 2, which is a photograph of a single section, 1 ft. long, and by reference to previous papers on Stedman packing[3] [4]. There were 8 layers; 6 were 1 ft. in height, one was 10 in. in height; and one, the top layer, was 2 in. in height. The 2-in. sections were used to provide a layer that could be removed easily and cleaned of scale and dirt that might collect. No such cleaning has been found necessary during approximately 16 months' operation.

The outer portion of the casing was circular in cross-section, and was arranged so that packing material could be driven into a packing gland between the casing and the tower shell to make a tight joint at the top of the casing. The space between the casing and the shell was open at the bottom so that vapors from the still could enter this space and provide a vapor jacket, thereby substantially eliminating heat losses from the packed section. Fig. 3 is a photograph taken looking down into the casing when it was partly packed.

3. A conventional, horizontal, overhead condenser ar-

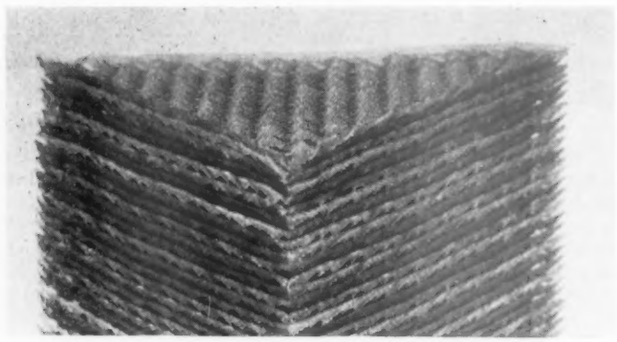


Fig. 2. Construction of Stedman packing

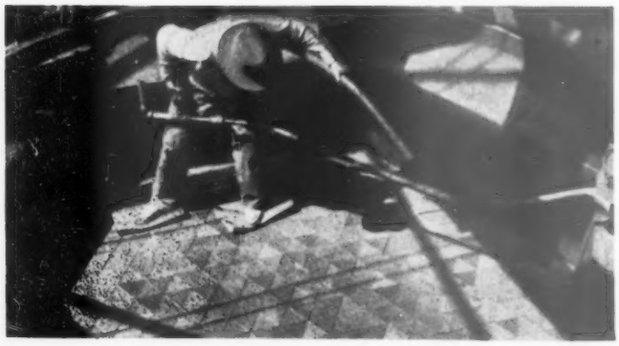


Fig. 3. Stedman packing—casing partly packed

ranged for vapor admission at the bottom center of the shell, and for removal of product and reflux condensate from the bottom of the shell on each side of the vapor inlet. A vent connection was made to the top of the condenser shell.

4. A reflux distributor consisting of a spider manifold to which were connected 726 tubes, $\frac{3}{16}$ in. OD, $\frac{1}{8}$ in. ID, each about 7 in. long, one for each section in the top layer of packing. These tubes directed the streams of reflux to the approximate center of each triangular-shaped section of packing and, by offering equal flow resistances, provided substantially equal division of the reflux liquid between the 726 columns of packing.

5. Necessary product and residue coolers, product pumps, a combination feed and still-residue pump, suitable control instruments, valves, piping, and product tanks. The unit is shown on first page of article.

The packing as used in this tower has a fractionating ability corresponding to about 4 theoretical plates per foot of height, or 28 theoretical plates for the 7 ft. of packing. The liquid and vapor holdup of the column under operating conditions amounted to approximately 25 bbls. The friction loss through the column was about 0.5 in. of mercury.

Operation of Unit

Three different types of operation of the unit are reported herein. All three call for the same handling of the controls, however, and all three will be described simultaneously.

In all cases the still first was charged with 1,000 bbls. of feed stock by means of the feed pump and connecting pipe lines. When the charge was in the still, steam was admitted to the heating coils at the desired predetermined rate.

After the temperature within the still had reached the boiling point, vapors rose through the vapor line into the base of the column and up through the Stedman packing into the condenser. Here they were condensed and returned as liquid to a collector below the condenser, from which the desired portion was removed as product and the balance returned to the column as reflux. The reflux entered the packing through the reflux-distributing spider, flowed down through the packing into the base of the column, and through the reflux return line into the still.

At the start of a run, if non-condensables were present, the pressure within the unit would rise until a pressure-control valve in the vent line opened and allowed gases to vent from the unit. As soon as the non-condensables were vented sufficiently from the condenser, the control valve closed and the pressure then gradually dropped as the distillation progressed, until the pressure in the top of the condenser became equal to that of the atmosphere. A valve then was opened, allowing air to enter as necessary, to blanket a portion of the condensing surface and to hold the pressure in the top of the condenser constant for the balance of the run.

At the start of a run a slop valve was opened for a short time to clear the product lines of material remaining from the previous run. The material so slopped returned to the still.

The product rate was regulated as desired by a flow controller, which also provided predetermined reflux ratios in the tower—these reflux ratios being altered in steps when predetermined vapor temperatures were attained in the vapor line leaving the tower.

At predetermined top tower temperatures, the product valve being used was first held open for a period of time sufficient to allow the piping from the top of the tower to the pump and the valve to be purged, and the product valve was then closed. Following the closing of the product valve, a second slop valve was opened for a period of time sufficient to clear the tower, pump, and piping of the improperly fractionated material that results from the holdup of the tower. The material slopped through the valve was pumped to the bottoms tank. At the end of the slop period the slop valve was closed, and

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the valve to the next product rundown tank was opened.

The runs continued in this fashion until the last overhead cut had been produced and the column holdup slopped. The steam was then shut off, and the residue pumped from the still through the residue cooler to the residues rundown tank.

Operation "A"—Making a Series of Cuts

In operation "A" the unit was charged with a light distillate fraction, and the unit operated at 3 reflux ratios of 7:1, 15:1, and 30:1, respectively—removing approximately 80 per cent of each cut at a reflux ratio of 7:1; then approximately 10 per cent at a reflux ratio of 15:1 and, finally, approximately 10 per cent at a reflux ratio of 30:1. Thus the average reflux ratio was approximately 10:1. Seven distillate cuts, one combined slop cut, and a residue cut were produced.

"True-boiling-point" distillations of the feed and tank samples were made also using a 25-mm-diameter No. 112 conical-type Stedman packed column with 1 ft. of packed section.

Operation "B"—Isomeric-Hexane Concentrate

In operation "B" the unit was charged with a rerun-tower sidestream. With this charging stock, the unit was operated at a constant reflux ratio of 15:1, using only 4 ft. 10 in. of Stedman packing, equivalent to about 19 theoretical plates. Two distillate cuts and a residue were produced. In order to provide material for additional experimental work, a third overhead cut was taken.

Operation "C"—Toluene Concentrate

In this operation the unit was charged with a rerun-tower sidestream. The unit was operated first to produce two distillates and a residue. The first distillate contained material distilled up to the point where the distillate stream had approximately the same toluene content as the original charge. The second distillate contained material distilled up to the point where the distillate stream had fallen again to approximately the toluene content of the charge.

The unit was next operated using the second distillate from the preliminary concentration as a charging stock. The unit was operated again to produce two distillates and a residue, in the same manner as during the preliminary concentration.

The characteristics of the charging stock and of the several products are shown in Table 1. "True-boiling-point" distillations of the charge and products are shown in Fig. 4.

Summary

The operations described indicate the commercial feasibility of large-diameter columns packed with Stedman packing, and show that narrow-boiling fractions can be obtained with a high degree of separation. For specific fractions, such as the production of substantially pure hydrocarbons, it will be necessary to use a greater packed height than has been used in the operations under discussion.

As has been indicated in the foregoing discussion, the batch Stedman unit offers the possibility of making a large number of cuts from a single charging stock, with good control and exact fractionation, even with varying feed composition. The present state of the art of controlling continuous bubble-tray batteries does not permit satisfactory operation to meet such requirements. In addition, batch operation permits one to take advantage of the possibility of using reduced reflux ratios in the early stages of the run, thereby reducing utility consumption and the size of the tower, condenser, and heating coils. Batch operation permits wide flexibility in the operation of the unit such as may be required to meet changing market demands.

Stedman packing is also particularly suitable for use: *a*, in continuous-distillation units, with charging stock of substantially constant composition; *b*, when a large number of theoretical plates is required; *c*, when a low friction loss per theoretical plate is necessary; and, *d*, when moderate to high efficiency columns of small diameter are desired.

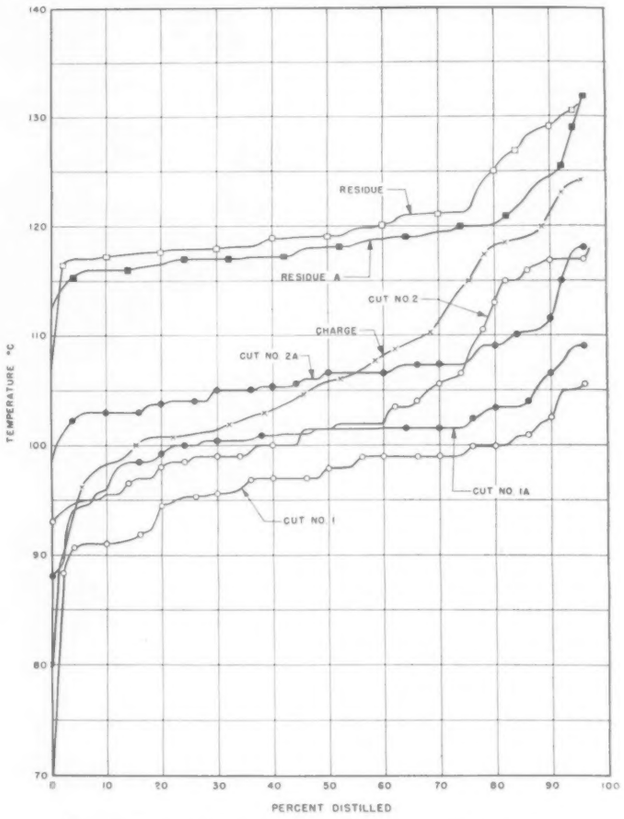

Fig. 4. True-boiling-point distillation, operation "C"

Acknowledgment

The authors wish to acknowledge the services of A. R. Richards, R. A. Findlay, W. J. Loveless, and P. M. Greer who conducted most of the tests and who assisted in the work

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TABLE 1—Operation "C"

Sample	Yield (Per Cent by Volume)	Gravity (Deg. API)	ASTM Distillation, in Deg. F. — Initial Boiling Point	10-Per Cent Point	50-Per Cent Point	90-Per Cent Point	End Point	Toluene Content (Per Cent by Volume)
FIRST RUNNING								
Charge	100.0	53.7	212	221	228	239	273	14.1
Tank—cut 1	14.6	58.4	201	205	208	214	239	6.9
Tank—cut 2	66.6	52.5	212	219	224	231	259	19.5
Residue	16.5	54.0	248	252	255	262	304	1.0
Loss	2.3	....	...	...	...	...	...	....
RERUNNING TANK—CUT 2								
Tank—cut 1A	37.0	54.1	203	208	212	216	234	15.2
Tank—cut 2A	39.2	48.5	219	221	223	226	250	34.0
Residue A	22.7	57.4	239	244	247	250	275	1.0
Loss	1.1	....	...	...	...	...	...	....

Save chemicals for defense

It's a *must* today to get the biggest yield of the best products from every barrel of crude we run—for the American motorist, for American industry and for Uncle Sam

And it's important to do it with the smallest possible consumption of chemicals for treating, for inhibiting and for raising octane rating Chemical supplies are limited

Universal processes have always been noted for producing the utmost value from a barrel of crude, and they do—from all kinds of crude

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It thus saves vital chemicals for other defense needs

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American Petroleum Institute Papers Covered All Branches of Refining

LOS ANGELES, Nov. 7.—There were ten papers on a wide diversity of subjects presented before the Division of Refining of the American Petroleum Institute at the St. Francis Hotel, San Francisco, Calif., on Nov. 5, 6, and 7th. These subjects covered chemistry of petroleum compounds, the quality of California crude oils, a method of fractionation, treating processes, cracking, lubrication and methods for evaluating the anti-knock value of gasoline. In addition, some of the papers presented before the division of production were of interest to refining technologists. Among these, two were on hydrocarbons, and four which covered the corrosion to the interior of gasoline pipe lines.

The complete program has been previously forwarded to all members of the American Petroleum Institute and is included in their quarterly for Oct. 1941. Likewise, preprints of all the papers presented have been mailed to members. We present herewith, however, reviews of some of these papers.

"NAPHTHA TREATING PAYS ITS WAY"

The above paper by Messrs. C. F. Mason, R. D. Bent, and J. H. McCullough of the Atlantic Refining Co. consisted of a follow-up to that published in our RT edition of Oct. 1 on the subject "Mercaptan Removal by Extraction With Caustic-Methanol".

The authors direct their presentation toward the methods of study utilized for the economic justification of this naphtha treating process and the results obtained from a 50-bbl. per day semi-commercial unit. It was stated that several large installations are under construction.

The economics which require consideration for the evaluation of the caustic-methanol process in comparison to mercaptan-conversion processes are relatively simple. If, to the items mentioned previously, is added the fact that with the low reagent recirculation there is required only 10 lb. of steam per barrel of gasoline to accomplish reagent regeneration, it is not a burdensome task to add also reasonable figures for power, water, labor, etc. If this is done, a manufacturing cost of approximately 1.0 cent per barrel of naphtha, including reagent loss, is reached. From the standpoint of lead susceptibility and octane number, the previously mentioned data show that, in the average application, at least 0.25 ml of tetraethyl lead per gallon of gasoline can be taken as a credit and, in many cases, a considerably higher figure will be obtained.

From the plant-investment cost angle, precise figures are difficult to give, due to variations arising as a result of differences in capacities and local conditions. It is believed that, for a plant of reasonable size—say 5,000 bbls. per day—the investment will range from $8 to $12 per barrel per day.

"REACTION CHAMBERS ON THERMAL CRACKING UNITS"

This paper, by R. C. Mithoff and L. F. Schimansky, of the Standard Oil Company of Calif. provided data and argument to support the authors' opinion to economically justify the installation of reaction chambers on all cracking units.

It was stated: "It was found that the quotient of the volume in which cracking occurred outside of the furnace, divided by raw-feed rate, correlated quite well with all the observed effects of addition of chambers. Numerically, this quotient is the sum of the volume of the reaction chamber in cubic feet, plus one-half of the volume of the evaporator in cubic feet divided by the raw-feed rate in thousands of barrels per day".

It is realized that use of the correlation factor V/R leaves much to be desired. However, the results obtained by its use were sufficiently accurate for solution of the engineering, process, and economic problems involved; and the laborious calculations based upon a sounder theoretical background could not be justified.

Fig. 1 is a graph showing the effect of reaction chambers on the net heat requirement of cracking heavy California residuums. This graph is based on raw feed entering the unit at 60° F., with no indirect heat exchange employed in the unit, and no naphtha recirculation to the top of the fractionating column. Fig. 1 is based on a large number of experimental and commercial data, and is believed to be quite accurate.

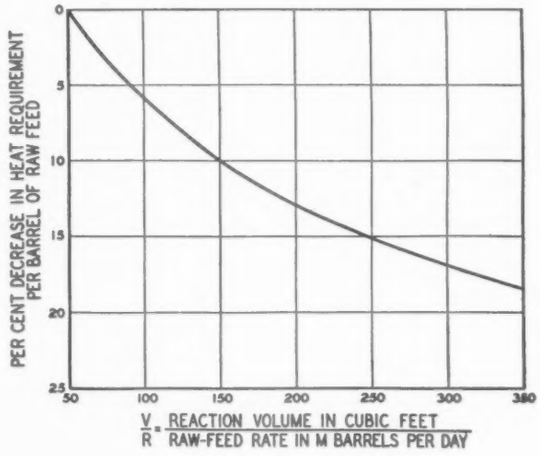

Fig. 1

Fig. 2 shows the percentage increase in daily feed capacity obtained in the different Standard Oil Company of California plants when reaction chambers were installed. This chart corresponds to production of a given yield of cracked naphtha of a given gasoline content. The gasoline content of the naphtha assumed in preparing this chart was 80%, which is a value readily obtainable on units either with or without reaction chambers.

Usually these questions resolve themselves into find-

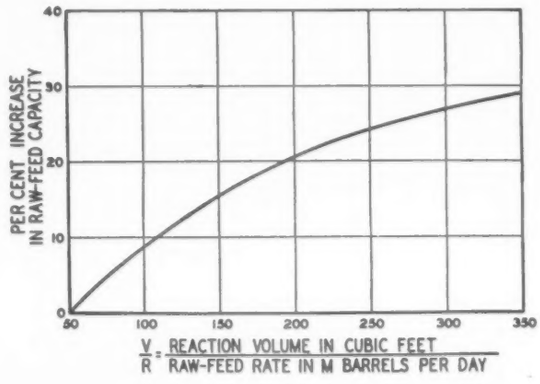

Fig. 2

EQUIPMENT MADE FOR SERVICE

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ing the cheapest way of obtaining the required additional capacity. If the required increase in gasoline production is within the range of that attainable by the installation of reaction chambers on existing units, it is believed that this alternative is far cheaper than to build new units.

If, for example, an 8-ft. x 50-ft. vessel, costing perhaps $60,000, were installed on an existing 8,000-bbl. per day unit, the daily gasoline production therefrom would be raised from about 2,300 bbls. to about 2,900 bbls. or an increase of about 600 bbls. per day (27%), for constant naphtha yield and quality. The additional gasoline, therefore, would be obtained from an investment of only about $100 per bbl. per day, as compared to about $225 for construction of a new unit.

"CHARACTERISTICS OF CALIFORNIA CRUDE OILS"

The paper prepared by R. C. Mithoff, G. R. MacPherson, and F. Sipos of the Standard Oil Company of Calif. covered the crude oil analysis method employed by that company together with the results obtained by this method in comparing typical California crudes with those produced elsewhere in the U. S. The distillation method and equipment used is described in detail both for fractionation atmospheric pressure and true boiling point analysis at pressures of atmospheric 10 mm. and 1 mm. pressure respectively. Appropriate inspections of each stock are obtained for the fire and steam distillation and upon each 4% cut of the true boiling point analysis a photograph and a schematic diagram of each type of still is included.

For those interested in a complete analysis of a typical crude oil from Long Beach Field, Calif., the paper includes two tables; the first including all properties of gasoline, kerosine distillate, gas oil, and residuum; and the second, an inspection of the 2% cuts up to 67% overhead for this same crude.

The authors have studied many individual properties of California crude to contrast them with the crude from other parts of the United States. For example, the characterization gravity is a test developed several years ago by the Standard Oil Company of Calif. to measure the paraffinicity on heavy oils. It served essentially the same purpose as does the UOP characterization factor K*. The value of K for some typical crudes are shown in Fig. 3.

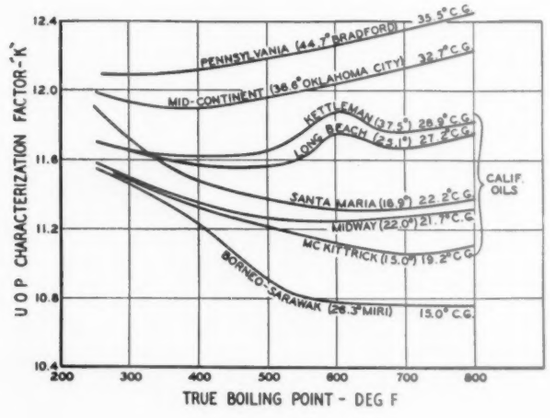

U O P CHARACTERIZATION FACTOR-"K"
TRUE BOILING POINT - DEG F
PENNSYLVANIA (44.7° BRADFORD) 35.5°C.G.
MID-CONTINENT (36.6° OKLAHOMA CITY) 32.7°C.G.
KETTLEMAN (37.5°) 28.9°C.G.
LONG BEACH (23.1°) 27.2°C.G.
SANTA MARIA (18.9°) 22.2°C.G.
MIDWAY (22.0°) 21.7°C.G.
MC KITTRICK (13.0°) 19.2°C.G.
BORNEO-SARAWAK (28.3° MIRI) 15.0°C.G.
CALIF. OILS

Fig. 3

A heart-cut analysis is made on crude oils for which highly detailed analytical data are desired. The crude oil is separated into narrow-boiling cuts each corresponding to about 5% yield from the original crude oil. The narrow cuts are then blended proportionally to produce a large number of gasolines, heart-cuts, and residuums. Two curves are given in the paper, showing the sulfur content and the viscosity of heart-cuts from Kettleman Hills crude oil.

California crude oils range in API gravity from about 6 to 60 degrees API, while the average for the entire state is about 27.5 degrees. Therefore, California crude oils, on the average, are substantially heavier than are most crude oils produced east of the Rockies.

California crude oils differ widely among themselves in volatility. Some are more than 85% asphalt, and some contain more than 85% gasoline. The true-boiling point relationship for several typical California and eastern crude oils is shown in Fig. 4.

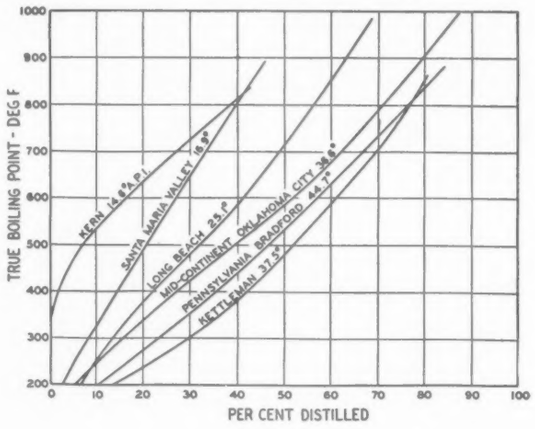


Fig. 4

The heavier California crude oils are substantially more viscous than are most Pennsylvania, Mid-Continent, or Texas crude oils, due primarily to their higher asphalt content.

The sulphur content of California crude oils is, in most cases, far higher than that of Pennsylvania and Mid-Continent oils, and substantially higher than that of most Texas oils. They range in sulfur content from about 0.1 to 6%. The sulfur distribution in several different crudes are shown in Fig. 5.

Among the minor components of California crudes, those of low API gravity are usually low in wax content, while naphthenic acids are present in most California crude oils through the boiling range from kerosine to asphalt. The cracked naphtha from California charging stock contains a considerable amount of nitrogen bases and phenolic compounds.

A brief portion of the paper is given to the refining characteristics of these oils and are concerned with the treating, reforming, and cracking properties. In general, they have been shown to differ markedly from most other crude oils east of the Rockies in gravity, paraffinicity, sulfur content, and asphalt content.

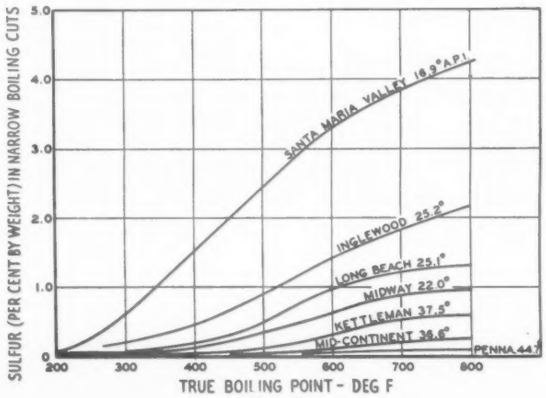
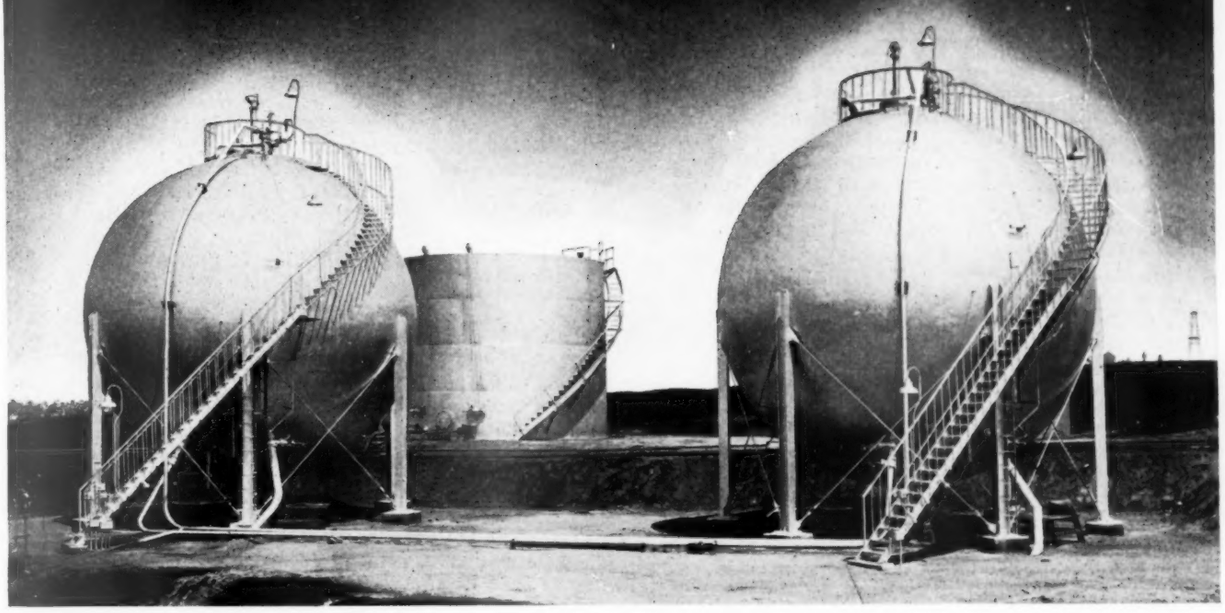


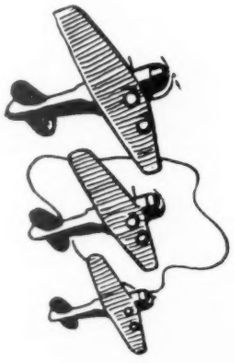
Fig. 5

*K. M. Watson, E. F. Nelson, and G. B .Murphy. Ind. Eng. Chem. 27, 1460 (1935).

NATURAL GASOLINE USED IN MAKING 100 OCTANE AVIATION GASOLINE



STORED IN HORTONSPHERES



THE twin Hortonspheres shown here have capacities of 2,500-bbls. each, and are designed to withstand an internal pressure of 50 lbs. per sq. in. gauge. They are being utilized at a refinery to store 28-lb. natural gasoline received from the field, which is used in the manufacture of 100 octane aviation gasoline.

The purpose in having two 2,500-bbl. spheres instead of a single 5,000-bbl. unit is to provide greater flexibility of operations and to improve working conditions. One sphere is usually being filled by material coming in from the field while material from the other is being fed into the processing system.

Hortonspheres are built in capacities of 1,000 to 20,000-bbls. or more for pressures of from 25 to 100 lbs. per sq. in. Where pressure tanks of larger size are required, as in handling high test motor fuels, the Hortonspheroid is used. Plain spheroids are built in capacities of 2,500 to 40,000 bbls. for pressures up to 30 lbs. and noded spheroids in capacities of 20,000 to 100,000 bbls. for pressures from 2½ to 20 lbs. per sq. in.

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Fabricating Plants in BIRMINGHAM, CHICAGO, and GREENVILLE, PA.

Polyform and Gas Reversion Processes For Higher Octane Gasoline

By E. R. Smoley and V. O. Bowles*

This paper was presented before the Western Petroleum Refiners Assn. at Shreveport, La., on Oct. 17th, and before the California Natural Gasoline Assn. at Los Angeles on Oct. 31, 1941.

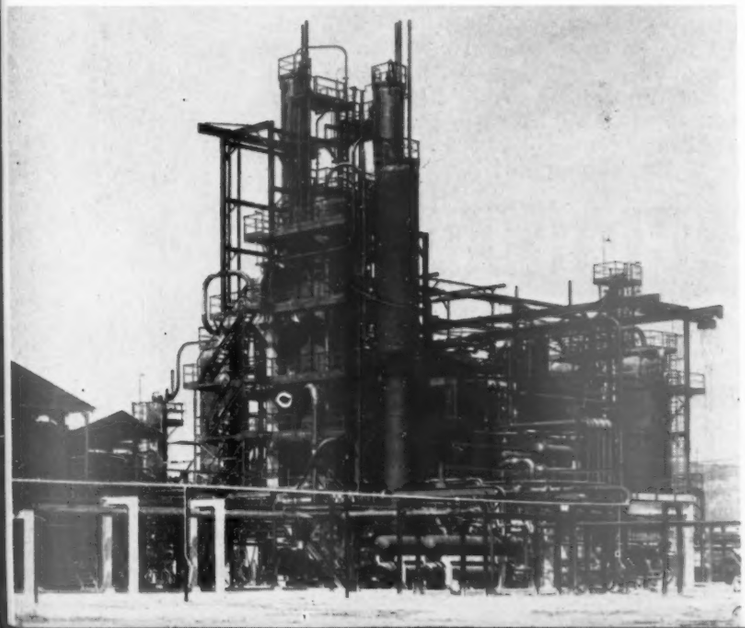
IN THIS present war emergency, oil men must carefully consider every method of producing the highest grade of gasoline at the lowest possible cost. Perfection of product is, of course, paramount.

The utilization of propanes and butanes from the natural gasoline industry for the economic production of high octane gasoline adheres to this program, as does also the production of butylenes for the manufacturing of valuable aviation alkylate. Large government orders and demands for high octane gasoline have already caused many oil refining companies to investigate and install the new Polyform and gas reversion processes because these processes make both cheaper and better gasoline of higher octane number.

Throughout the country Polyform and gas reversion plants now process close to 100,000 B/D of naphthas, propanes and butanes, of which approximately one-third are propanes and butanes; a good share of these come from the natural gasoline industry. A year ago there were 11 Polyform installations. Today there are 14 such plants in operation and 4 more under construction. The operation of the last two units recently completed has greatly exceeded expectations in yield, octane and general results.

Means for many phases of octane number improvement may be provided by the naphtha Polyform and gas reversion processes. Straight run heavy naphthas may be polyformed for the production of high yields of 76 to 80 ASTM octane number gasoline. Straight run gas oil, recycle gas oil, or catalytically cracked gas oils may be polyformed to 74-76 ASTM octane number with improved yields over conventional processing, and reduced crude may be polyformed at higher conversions per pass for the production of 70-72 ASTM octane number gasoline. Heavy cracked gasoline may be polyformed satisfactorily to 76 ASTM octane to further improve refinery octane numbers. The use of outside propanes and butanes either from refinery gas or from natural gas in naphtha Polyform and gas reversion units has resulted in high yields of high octane number gasoline from this source of raw material. The gasoline produced from Polyform units has excellent blending value and good lead susceptibility. The spread between the ASTM and the Research octane number varies from 9 to 14 points and the appreciation of road octane number is excellent. Standard road tests have indicated that naphtha polyform gasoline of the same octane number is equivalent to gasolines made from catalytic processes.

*The Lummus Co.



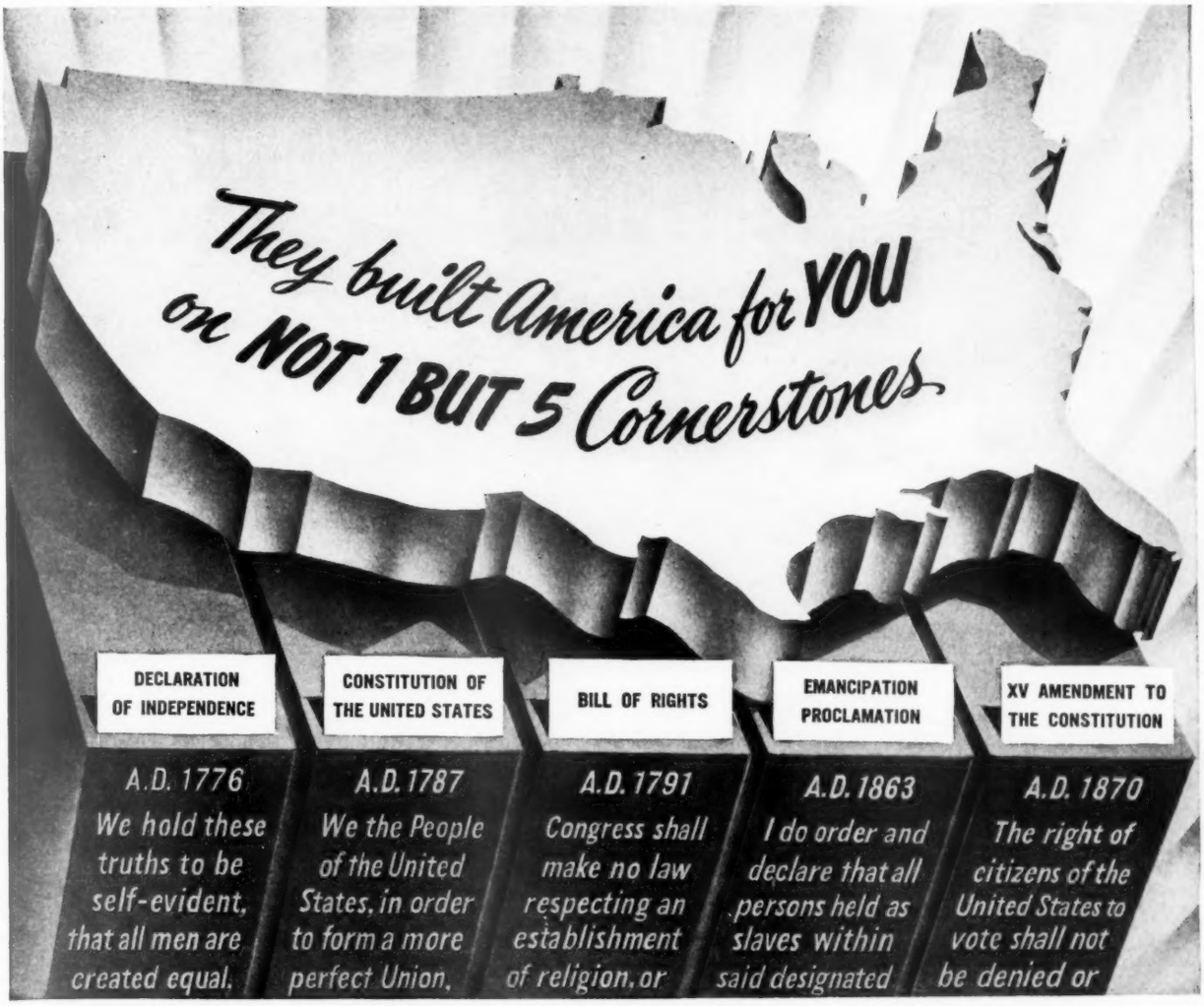
Aviation fuels which lead up to 91 ASTM octane number with less than 4cc. of lead and meeting all Army specifications may be made from the Polyform process. This stock may also be used as a base for blending with isopentane and aviation alkylate or iso-octane and 3cc. of lead to produce 100 octane aviation fuel meeting all of the Army specifications. The polyform distillates are rich in aromatics containing from 3 to 5% toluene which may be economically recovered as nitration grade toluol by well known process methods. A very interesting application of the polyform process is the by-product production of a butylene cut which may be used for the manufacture of aviation alkylate. The normal butanes from the alkylation plant are returned to the Polyform unit to complete the cycle. The use of field butane in a Polyform unit for the production of a BB cut for the manufacture of aviation alkylate will add to defense resources.

The naphtha Polyform and gas reversion processes, as most of you already know, employ the principle of cracking an oil in admixture with various amounts of normally gaseous hydrocarbons (propanes and butanes). The oil in this mixture can be subjected to higher temperature and higher degree of conversion per pass than possible in the ordinary thermal cracking process without the danger of coke formation in the cracking tubes, and without uneconomically large production of residue gases. Cracking velocities of individual propanes and butanes are increased when admixed with naphtha because of cooperation and partial consumption by alkylation and other synthesis reactions. Thus admixed gases have a pronounced physical effect on naphtha reforming which take place concurrently with gas polymerization. Conversion conditions in naphtha reforming can be made more severe with attendant greater octane number improvement when the naphtha is admixed with gas conversion stock in sufficient amount.

The naphtha Polyform and gas reversion processes as applied to the conversion of low-octane heavy naphtha into high-octane gasoline are illustrated in the flow sheet, Fig. 1. The naphtha charge is pumped to the top of the absorber tower where it absorbs the propane and butane recycle from the unit. This rich naphtha serves as the furnace charge and after picking up preheat through exchangers passes through the furnace where outlet conditions of approximately 1050° F. and 1200 lbs. pressure are maintained. The furnace outlet is quenched with circulating oil from the bottom of the evaporator tower and discharges into the evaporator and bubble tower which operates at about 400 lbs. pressure and 625° F. flash temperature. The end point gasoline is distilled overhead and stabilized. The stabilizer overhead consists of the propane and butane recycle, and the residue gas, which flow through the condenser into the absorber tower where the residue gas is separated from the balance of the recycle. The processing of outside propanes and butanes may be carried out in this unit by adding these materials to the stabilizer overhead or as liquid feed to the furnace charge pump.

The application of the Polyform and gas reversion process to the cracking of a full crude is illustrated in the four-coil combination crude Polyform unit flow sheet, Fig. 2. This flow sheet illustrates a 22,000 B/D crude topping and Polyform unit. This one unit replaces the conventional type of crude topping and cracking unit, a thermal polymerization unit and a gas compression and absorption plant.

The flow is simple. Crude is charged through heat exchangers and a heater convection bank into an atmospheric crude topping tower from the top of which straight-run gasoline is removed. Heavy naphtha and furnace oil or


They built America for YOU
on NOT 1 BUT 5 Cornerstones
DECLARATION OF INDEPENDENCE
A.D. 1776
We hold these truths to be self-evident, that all men are created equal.
CONSTITUTION OF THE UNITED STATES
A.D. 1787
We the People of the United States, in order to form a more perfect Union.
BILL OF RIGHTS
A.D. 1791
Congress shall make no law respecting an establishment of religion, or
EMANCIPATION PROCLAMATION
A.D. 1863
I do order and declare that all persons held as slaves within said designated
XV AMENDMENT TO THE CONSTITUTION
A.D. 1870
The right of citizens of the United States to vote shall not be denied or

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MAKE AMERICA STRONG. That was the job of the men who planned this country. Keep America strong. That's your job. They did a grand job then... you're doing a great job now...

America's worth protecting. It's so *rightly* built. This nation stands solid on five cornerstones of freedom... *not one cornerstone, but five.* We demanded the right to *be* free, and dared to declare our everlasting Independence. We wanted a workable plan to secure the Blessings of Liberty, so we wrote ourselves a Constitution. We wanted to guard and shield these liberties, and added the Bill of Rights. We wanted freedom for *all* Americans, so we issued a Proclamation of Emancipation from slavery. We knew that all free men must have the right to vote, so we guaranteed that right by the Fifteenth Amendment. The U. S. A. you love today depends on not one but five.

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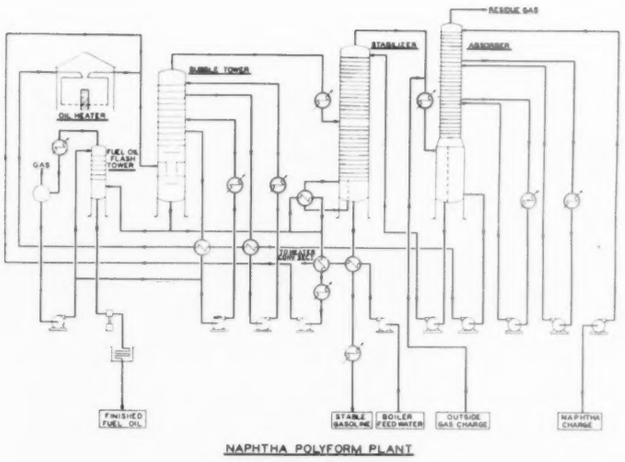


NAPHTHA POLYFORM PLANT

Fig. 1

kerosine side-streams are withdrawn through stripping towers, and below the furnace oil drawoff a virgin gas oil cut is removed. This virgin gas oil cut is charged hot with propanes and butanes to the virgin gas oil polyform coil where 34-45% gasoline production per pass is obtained. Heavy reduced crude is charged hot from the bottom of the atmospheric tower through the polyform vis-breaker coil together with the heavy tar stripper side-stream and propanes and butanes at a conversion per pass of approx. 14 to 16%. The light recycle stock from the base of the fractionating tower is cracked in the recycle polyform coil with the propanes and butanes to approximately 25 to 32% gasoline per pass. The C_3 and C_4 diluent for these 3 coils is all furnished as condensate from the stabilizer overhead and is composed of approximately 25% butanes and 75% propanes. Heavy naphtha is passed over the absorber to separate the propane and butane recycle from the residue gas, and the rich naphtha from the base of the absorber is polyformed in the naphtha polyform coil. All 4 coils discharge into a common separator tower. The 10° to 12° A. P. I. gravity bottoms from this tower is reduced in the atmospheric tar stripper to the desired fuel oil gravity, the overhead from the tar stripper returns to the bubble tower, and the side stream goes to the reduced crude vis-breaker.

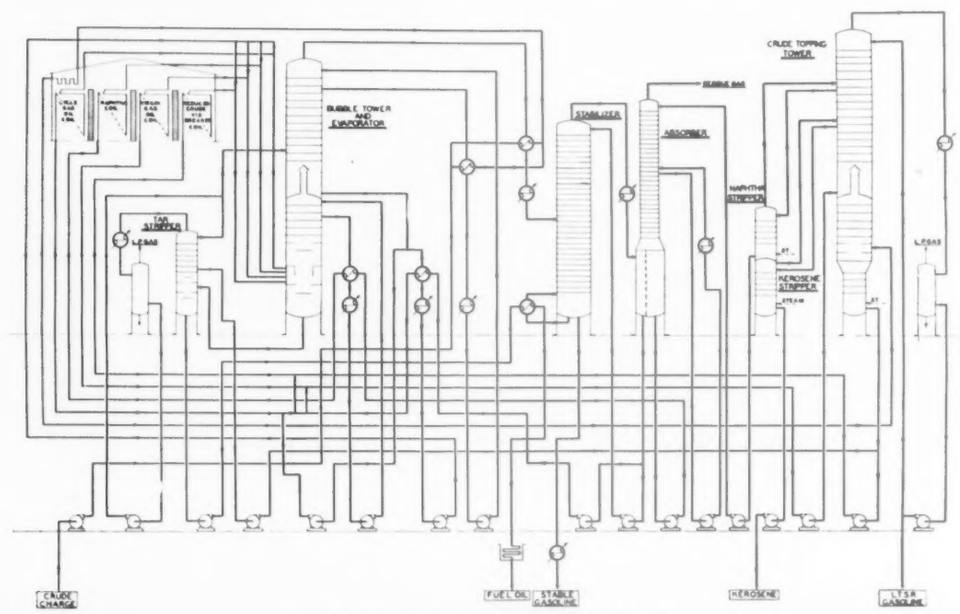
Conversion of propanes and butanes concurrently with naphtha in Polyform and gas reversion plants is especially interesting to most refiners just now, because the government's vast defense requirements are severely taxing every facility for producing high octane gasoline and are depleting commercial production of high octane components. Resulting increase in tetraethyl lead requirements, therefore, sets a high value on any new high octane production such as may be obtained from propanes and butanes. Table 1 illustrates the profitability of converting propanes and butanes in an average size Polyform unit. The values of the propane and butane charges have been varied according to the sources of these materials. Field butane was considered to be available at 2c per gal. Field propane was considered available at a cost of 1c per gal. With gasoline bringing 6 and 6½c per gal, at the refinery, an average value of 7c per gal. for this high-octane gasoline production appears reasonable, the difference representing tetraethyl lead savings. Thus, with present-day plant costs, a payout on the increment investment of 1.7 years for field butane charge, and 3.4 years for field propane charge is indicated. If these propanes and butanes are obtained at fuel gas value, payouts of 1.0 and 3.2 years respectively will be realized; while, if the propanes and butanes are obtained from the plant flare (having no value) then payouts of 0.7 and 1.7 years respectively may be obtained. The processing of propanes and butanes in a Polyform or gas reversion plant adds only to the operating expense some utilities and maintenance.

Table 1—Butane and Propane Conversion in a Naphtha Polyform or Gas Reversion Unit

Charge Source	Case I-A Butane Natural Gas	Case II-A Propane Natural Gas
Quantity, Bbls./Optg. Day	1,000	1,000
Yields:		
Gasoline, Bbls./Optg. Day	460	350
Fuel Oil, Bbls./Optg. Day	35	25
Fuel Gas, Bbls./Optg. Day (F.O.E.)	280	305
Charge Value*, $/Day	840	420
Operating Costs**, $/Day	135	275
Management, Interest, Taxes, $/Day	75	140
Total Charges, $/Day	1,050	835
Gasoline Value @ 7.0c/gal., $/Day	1,350	1,060
Fuel Oil Value @ $0.70/Bbl., $/Day	24	17
Fuel Gas Value @ 10c/MM Btu., $/Day	175	191
Total Receipts	1,549	1,268
Net Return, $/Day	499	433
Net Return, $/Year	165,000	143,000
Increment Plant Cost, $	285,000	485,000
PAYOUT TIME, YEARS	1.7	3.4

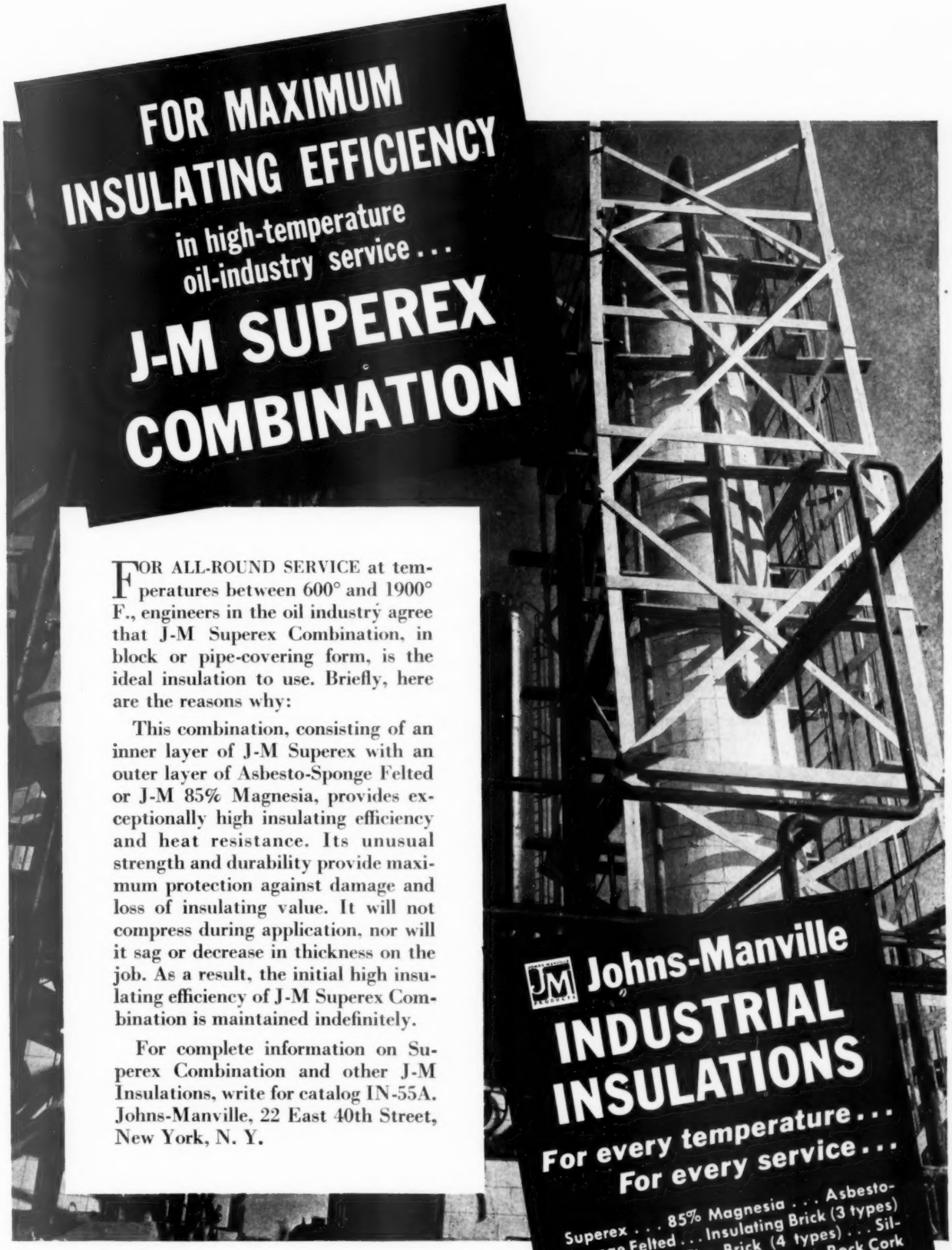
*Natural Butane @ 2.0c/gal., Natural Propane @ 1.0c/gal., Fuel Gas @ 10c/MM Btu.
**Utilities: Fuel @ 10c/MM Btu., Water @ 0.5c/1000 gal., Power @ 0.5c/KWH, no plant steam required.

The use of natural gasoline in the direct manufacture of 100-octane aviation gasoline simultaneously with high-octane motor gasoline is an application for the Polyform and gas reversion processes which will interest all natural gasoline producers. The hypothetical operation shown in the following example indicates a high potential production of 100-octane aviation gasoline from field casinghead. For example, consider a producer who has available 5000 B/D of 26-lb. casinghead containing approximately 3000 B/D of isopentane-free natural gasoline, 350 B/D of iso-pentane, 1100 B/D of normal butane and 550 B/D of iso-butane. This stock would be deisopentanized and debutanized and the gasoline separated by distillation into aviation base stock and a heavy naphtha. The heavy naphtha (1500 B/D) would be polyformed with 1100 B/D of normal butane for the production of 1300 B/D of 76-octane motor gasoline and at the same time a by-product butane-butylene stream would be withdrawn and charged to an alkylation plant along with the



FLOW SHEET - FOUR-COIL COMBINATION CRUDE POLYFORM UNIT

Fig. 2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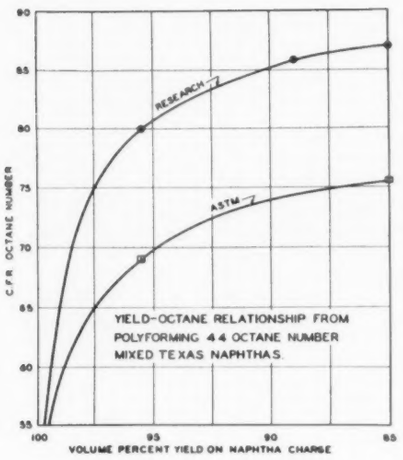
RESEARCH
ASTM
YIELD-OCTANE RELATIONSHIP FROM POLYFORMING 44 OCTANE NUMBER MIXED TEXAS NAPHTHAS
C.F.R. OCTANE NUMBER
VOLUME PERCENT YIELD ON NAPHTHA CHARGE

Fig. 3

550 B/D of isobutane with a production of approximately 1000 B/D of 93-95-octane aviation alkylate. The normal butane from the alkylation operation would all be recycled to the Polyform plant. The alkylate would be blended with the 350 B/D of iso-pentane and 500 B/D of the aviation base stock produced from the original natural gasoline, resulting in a net production of 1850 B/D of leaded 100-octane gasoline. Thus a charge of 5000 B/D of 26 lb. casinghead of the characteristics noted could produce 1850 B/D of 100-octane aviation gasoline plus 2300 B/D of 73 ASTM octane motor gasoline. This example indicates a high volumetric yield of 100-octane aviation and high-octane motor gasoline from the original natural gasoline charge.

Operating data from commercial Polyform and gas reversion units have been published in the oil journals September 1940 and the American Petroleum Institute Proceedings Nov. 1940. Yields, octanes, lead susceptibility, inspections of charge and products, operating conditions, and blending results are given for various types of charge stocks and operations. A large Polyform unit charging straight run naphtha of 250-400° F. boiling range and about 45-octane number from a mixture of Texas and Coastal crudes along with outside propanes and butanes has recently been completed and placed on initial operation. During two four-day test runs with frequent gagings, accurate yields of 83.5% of 10 R. V. P. 400 end point gasoline with a Research octane number of 87.5, and 95.5% of 10 R. V. P. 400 end point gasoline of 81.0 Research octane number were established. Table 2 presents some of the operating data. This yield-octane relationship as shown in Fig. 3 for both the Research and ASTM octane numbers is well substantiated by more than 750,000 barrels of gasoline production in this plant at varying octanes.

A series of runs were made in the pilot plant, processing 52.9 API gravity California naphtha with a boiling range of 160-400° F. end point, having 58.3 ASTM octane number. The runs were made at a coil outlet pressure of 1500 lbs. and temperatures ranging from 1060° F. to 1100° F. The operating conditions, yields, octanes, inspections of charge and products are given for the four runs in Table 3 —(*Only 2 runs shown—Ed*). As would be expected from this California naphtha charge stock, a considerably higher yield-octane relationship was obtained than from Mid-Continent or Texas naphthas. These results indicate at least a 5% higher yield at this octane range than from Texas stocks.

Because of the naturally high octane number characteristic of most California straight-run gasolines, and because of the generally higher octane of cracked gasoline produced from the heavier oils, reforming California straight-run naphthas has not been practiced widely until very recently. However, the effect of defense requirements on the quality of commercial gasoline production, as well as the ever rising octane level of all grades of gasoline will make it exceedingly difficult for most refiners to maintain the present high octane level of their commercial production, even with all existing cracking facilities being employed to the fullest extent. For this reason the processing of low-octane gasoline components in Polyform and gas reversion units is rapidly becoming a necessity. The production of high octane gasoline from propanes and butanes not now being diverted to gasoline production is especially profitable where it can be carried out concurrently with naphtha polyforming, and is a step forward towards the more efficient utilization of the nation's natural resources. This is particularly desirable during the defense emergency. The by-product manufacture of butylene for the production of valuable aviation alkylate is, furthermore, becoming imperative. Refiners are recognizing these factors everywhere and the Polyform and gas reversion processes should find even greater application in the refining industry in the future.

Table 2—Commercial Polyform Operation of Texas Naphthas with Outside Propanes and Butanes

Research Octane No.	**87.5**	**81.0**
Operating Data		
Coil Outlet Temp. °F.	1062	1040
Coil Outlet Pressure, Lbs./Sq. In.	1200	1200
Evaporator Bottom Temp. °F.	625	625
Evaporator Press., Lbs./Sq. In.	390	390
Absorber Pressure, Lbs./Sq. In.	340	340
Yields Volume %		
Charge Naphtha	100.0	100.0
Butanes	20.7	20.3
Propanes	16.6	15.4
Stabilized Gasoline	98.0	110.0
Fuel Oil	4.8	2.4
Calculated Vol. % Stab. Gasoline on Naphtha Alone	83.5	95.5

Laboratory Inspections	**Charge Naphtha**	**Stab. Gasoline**	**Tar**	**Stab. Gasoline**	**Tar**
A.P.I. Gravity	51.2	57.2	9.5	59.2	12.0
R.V.P., Lbs./Sq. In.	...	9.7		10.0	...
Visc. SUS @ 122°F.	...	...	19	...	15
B.S. & W., %	...	...	0.4	...	0.4
A.S.T.M. Distn., °F.					
I.B.P.	205	95	..	94	...
10%	260	130	..	134	...
50%	310	232	..	243	...
90%	360	339	..	327	...
End Point	400	389	..	385	...
Research Octane No.	44.0	87.5	..	81.0	...

Table 3—Pilot Plant Data Polyforming California Naphtha

Run No.	**1**	**3**
Operating Data		
Coil Outlet Temp. °F.	1070	1090
Coil Outlet Press., Lbs./Sq. In.	1500	1500
Tower Press., Lbs./Sq. In.	300	300
Yields, Vol. %		
Stabilized Dist.	92.4	83.9
Tar	1.3	3.8
Gas F.O.E.	6.2	12.2
Gas F.O.E.	6.2	12.2

Laboratory Inspections	**Charge Naphtha**	**Stab. Gasoline**	**Tar**	**Stab. Gasoline**	**Tar**
A.P.I. Gravity	52.9	55.1	16.3	53.5	8.2
R.V.P. Lbs./Sq. In.	...	8.8	...	9.5	...
A.S.T.M. Distn. °F.					
I.B.P.	160	93	394	94	421
10%	211	153	485	144	491
50%	267	247	526	238	591
90%	344	348	...	349	...
End Point	397	404	...	413	...
A.S.T.M. Octane No.	58.3	73.8	...	78.2	...
Research Octane No.	...	83.7	...	89.4	...

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